



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

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

July 15, 2008

Kenneth D. Racke, Ph.D.  
Regulatory Leader  
Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268

Subject: Miscellaneous Main Labeling Revision  
Entrust Naturalyte Insect Control  
EPA Reg. No. 62719-282  
Application dated April 10, 2008


Dear Dr. Racke:

The above referenced labeling, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable subject to the following comments:

*This labeling amendment was accepted with the understanding that the revisions/updates made to the label are consistent with the Agency's stamped accepted labeling dated July 20, 2005 and notifications coded "T6P/Entrust/FPL/05-26-06" and "T6P/Entrust/Notif/09-12-07".*

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

Sincerely,

  
George T. LaRocca,  
Product Manager 13  
Insecticide Branch  
Registration Division (7505P)

Enclosure

2/47

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

# Entrust<sup>®</sup>

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

A Naturalyte<sup>®</sup> insect control product formulated for the organic grower for control of lepidopterous larvae (worms or caterpillars), leafminers, thrips, and red imported fire ants.

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

spinosad (a mixture of spinosyn A and spinosyn D) .....	80%
Other Ingredients .....	20%
Total .....	100%

Contains 80% active ingredient on a weight basis.

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



Listed by the Organic Materials Review Institute (OMRI) for use in organic production.

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

JUL 15 2008  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No.  
62719-282

### Keep Out of Reach of Children

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#### Precautionary Statements

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##### Hazard to Humans and Domestic Animals

##### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

Mixers/loaders must wear:

- An approved dust/mist filtering respirator (NSHA/NIOSH approval number prefix TC-21C), or NIOSH approved respirator with any N, R, P or HE filter.

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.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

##### Environmental Hazards

This product is toxic to bees exposed to treatment for 3 hours following treatment. Do not apply this

3/47

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 the 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.  
**Pesticide Storage:** Store in original container only.  
**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. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

EPA Reg. No. 62719-282

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

®Trademark of Dow AgroSciences LLC

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

**Net Weight** \_\_\_\_\_

4/47

(Base label for nonrigid containers any size):

# Entrust®

## Naturalyte® Insect Control

A Naturalyte® insect control product formulated for the organic grower for control of lepidopterous larvae (worms or caterpillars), leafminers, thrips, and red imported fire ants.

The contents of this package are not for individual resale.

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

spinosad

(a mixture of spinosyn A

and spinosyn D) ..... 80%

Other Ingredients ..... 20%

Total ..... 100%

Contains 80% active ingredient on a weight basis.

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



Listed by the Organic Materials Review Institute (OMRI) for use in organic production.

### Keep Out of Reach of Children

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#### Precautionary Statements

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##### Hazard to Humans and Domestic Animals

##### Personal Protective Equipment (PPE)

**Applicators and other handlers must wear:**

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

**Mixers/loaders must wear:**

- An approved dust/mist filtering respirator (NSHA/NIOSH approval number prefix TC-21C), or NIOSH approved respirator with any N, R, P or HE filter.

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.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

5/47

### 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 the 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.

**Pesticide Storage:** Store in original container only.

**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.

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

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

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

EPA Reg. No. 62719-282

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

®Trademark of Dow AgroSciences LLC

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

Net Weight \_\_\_\_\_

6/47

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

# Entrust<sup>®</sup>

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

A Naturalyte<sup>®</sup> insect control product formulated for the organic grower for control of lepidopterous larvae (worms or caterpillars), leafminers, thrips, and red imported fire ants.

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

spinosad (a mixture of spinosyn A and spinosyn D) .....	80%
Other Ingredients .....	20%
Total .....	100%

Contains 80% active ingredient on a weight basis.

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



Listed by the Organic Materials Review Institute (OMRI) for use in organic production.

### Keep Out of Reach of Children

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#### Precautionary Statements

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##### Hazard to Humans and Domestic Animals

##### Personal Protective Equipment (PPE)

**Applicators and other handlers must wear:**

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

**Mixers/loaders must wear:**

- An approved dust/mist filtering respirator (NSHA/NIOSH approval number prefix TC-21C), or NIOSH approved respirator with any N, R, P or HE filter.

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.
  - Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### 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 the 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.

**Pesticide Storage:** Store in original container only.

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

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

EPA Reg. No. 62719-282

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

®Trademark of Dow AgroSciences LLC

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

**Net Weight** \_\_\_\_\_

8/47

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

# Entrust<sup>®</sup>

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

A Naturalyte<sup>®</sup> insect control product formulated for the organic grower for control of lepidopterous larvae (worms or caterpillars), leafminers, thrips, and red imported fire ants.

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

spinosad	
(a mixture of spinosyn A and spinosyn D)	80%
Other Ingredients	20%
Total	100%

Contains 80% active ingredient on a weight basis.

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



Listed by the Organic Materials Review Institute (OMRI) for use in organic production.

## Keep Out of Reach of Children

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### Precautionary Statements

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#### Hazard to Humans and Domestic Animals

#### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

Mixers/loaders must wear:

- An approved dust/mist filtering respirator (NSHA/NIOSH approval number prefix TC-21C), or NIOSH approved respirator with any N, R, P or HE filter.

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.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### 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 the 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.

**Pesticide Storage:** Store in original container only.

**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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9330 Zionsville Road  
Indianapolis, IN 46268

Net Weight \_\_\_\_\_

(Label booklet cover):

# Entrust<sup>®</sup>

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

A Naturalyte<sup>®</sup> insect control product formulated for the organic grower for control of lepidopterous larvae (worms or caterpillars), leafminers, thrips, and red imported fire ants.

**This bag [container] is not for individual resale.**

Active Ingredient:

spinosad	
(a mixture of spinosyn A	
and spinosyn D) .....	80%
Other Ingredients .....	20%
Total .....	100%

Contains 80% active ingredient on a weight basis.

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



Listed by the Organic Materials Review Institute (OMRI) for use in organic production.

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

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

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11/47

(Page 1 through end):

<b>Table of Contents</b>	<b>Page</b>
Precautionary Statements	-
Personal Protective Equipment (PPE)	-
User Safety Recommendations	-
Environmental Hazards	-
Directions for Use	-
Agricultural Use Requirements	-
Non-Agricultural Use Requirements	-
Storage and Disposal	-
General Information	-
General Use Precautions	-
Mixing	-
Rate Chart for Small Plantings	-
Application	-
Uses	-
Asparagus	-
Banana and Plantain	-
Bulb Vegetables	-
Bushberries	-
Caneberries	-
Citrus	-
Cole Crops ( <i>Brassica</i> Vegetables)	-
Corn (Field Corn, Sweet Corn, Popcorn, and Corn Grown for Seed) and Teosinte	-
Cotton	-
Cranberry	-
Cucurbits	-
Fig	-
Fruiting Vegetables and Okra	-
Grape	-
Grass Crops, Grass Grown for Seed, Pastures and Rangeland	-
Herbs	-
Leafy Vegetables, Leaves of Root and Tuber and Legume Vegetables, and Watercress	-
Legume Vegetables (Succulent and Dried Beans and Peas)	-
Mint	-
Ornamentals (Herbaceous and Woody) Growing Outdoors, in Nurseries (Including Conifer Seed Orchards), or in Greenhouses	-
Peanut	-
Pome Fruits	-
Potatoes, Tuberous and Corm Vegetables, and Artichoke	-
Root Vegetables	-
Small Cereal Grains and Grain Amaranth	-
Soybean	-
Stone Fruits	-
Strawberry	-
Tree Farms or Plantations	-
Tree Fruits	-
Tree Nuts and Pistachios	-
Fire Ants – Mound Application in Turfgrass and Ornamentals, in Greenhouses, and in Other Outdoor Areas	-
Terms and Conditions of Use	-
Warranty Disclaimer	-
Inherent Risks of Use	-
Limitation of Remedies	-

12/47

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**Precautionary Statements**

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**Hazard to Humans and Domestic Animals****Personal Protective Equipment (PPE)****Applicators and other handlers must wear:**

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

**Mixers/loaders must wear:**

- An approved dust/mist filtering respirator (NSHA/NIOSH approval number prefix TC-21C), or NIOSH approved respirator with any N, R, P or HE filter.

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.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**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
- Waterproof gloves
- Shoes plus socks

**Non-Agricultural Use Requirements**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow others to enter the treated area until sprays have dried.

**Storage and Disposal**

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

**Pesticide Storage:** Store in original container only.

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

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

**Container 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.

**Nonrefillable nonrigid containers:**

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

**Refillable rigid containers larger than 5 gal:**

**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 rigid containers larger than 5 gal:**

**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

Entrust® is a Naturalyte® insect control product for control of many foliage feeding pests including lepidopterous 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. Spinosad is classified as an organic substance by the USDA National Organic Standards Board. Entrust (wettable powder) 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

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

### Insecticide Resistance Management (IRM)

Entrust 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 Entrust 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, you may contact your local Dow AgroSciences representative or by calling 800-253-3033 or over internet at [www.dowagro.com](http://www.dowagro.com).

## Mixing

### Application Rate Reference Table

Application Rate of	Active Ingredient
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Entrust (oz/acre)	Equivalent (lb ai/acre)	Acres per Pound of Entrust
0.5	0.025	32
0.75	0.0375	21.2
1	0.05	16
1.25	0.0625	12.8
1.5	0.075	10.6
2	0.1	8
2.5	0.125	6.4
3	0.15	5.3

**Mixing Entrust Alone:** Fill the spray tank with water to about 1/2 of the required spray volume. Start agitation and add the required amount of Entrust. 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 Entrust 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 Entrust. 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. Entrust and other wettable powders

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

3. Emulsifiable concentrates and water-based solutions
4. Spray adjuvants, surfactants and oils
5. 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 Entrust. 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 Entrust. To do this, add all other tank mix components first, then check the spray tank pH, adjust if desired, and then add Entrust. 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.
- Adjuvants may require organic certification; consult your organic certifier.

### Rate Chart for Small Plantings

Entrust oz per acre	Amount of Entrust Per Quantity of Spray Solution Dry Ounces or Grams					
	Per Gallon of Spray		Per 3 Gallons or 1000 ft <sup>2</sup>		Per 5 gallons of Spray	
	oz	gm	oz	gm	oz	gm
1	0.008	0.23	0.024	0.69	0.04	1.15
1.5	0.012	0.34	0.036	1.02	0.06	1.7
2	0.015	0.43	0.046	1.30	0.075	2.15
2.5	0.019	0.54	0.058	1.64	0.095	2.7
3	0.023	0.65	0.069	1.96	0.115	3.25

For small plantings or spot sprays, add the required amount of Entrust to the recommended amount of water, mix thoroughly, and apply uniformly to plant foliage up to the point of runoff. It is recommended to mix only as much spray as needed for a single treatment. Do not use more than 3 gallons of spray per 1000 sq ft of area. If your scale cannot accurately weigh the amount needed, multiple by a factor that delivers an amount within your scale's accuracy and then divide the amount weighed volumetrically by this factor (e.g., if your scale will only accurately weigh amounts of 2 gms or greater and you only need 1 gm, weigh out 4 gms and then divide this volume into 4 parts). Follow all label instructions for mixing and applications.

### Application

Proper application techniques help ensure thorough spray coverage and correct dosage for optimum insect control. The following recommendations are provided for ground and aerial application of Entrust® Naturalyte® insect control. 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 recommendations 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 on the premise that all plant parts are thoroughly wetted, to the point of runoff, with spray solution. To determine the number of gallons of



dilute spray 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 on the premise that all the plant parts are uniformly covered with spray solution but not to the point of runoff as with a dilute spray. Instead, a lower spray volume is used to deliver the same application rate per acre as used for the dilute spray.

#### **Aerial Application**

Apply in a 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**

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

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

Entrust 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 Entrust 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 sprinkler 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 Entrust 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 Entrust, 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 sprinkler, 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, you should contact state extension service specialists, equipment manufacturers or other experts.
- Do not connect an irrigation system used for pesticide application (including greenhouse systems) to a public water system unless the pesticide label prescribed safety devices for public water systems are in place with current certification. Specific local regulations may apply and must be followed.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall 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 back flow 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.
- 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 back flow prevention device or air gap (preferred) by both state and local authorities.
- Systems must use a metering pump, 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 into the water line, inject the mixture in the center of the pipe diameter or just ahead of an elbow or tee in the irrigation line so that the turbulence created at those points will assist in mixing. The injection point must be located after all back flow prevention devices on the water line.
- The tank holding the insecticide mixture should be free of rust, fertilizer, sediment, and foreign material, and equipped with an in-line strainer situated between the tank and the injection point.

19/47

## Uses

### Asparagus

(Post Harvest Protection of Ferns Only)

#### Pests and Application Rates:

Pests	Entrust (oz/acre)
asparagus beetle	1.25 - 2

#### 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 Entrust® Naturalyte® insect control 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 5.6 oz of Entrust (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.

### Banana and Plantain

(For use in California, Florida, Hawaii and Texas only)

#### Pests and Application Rates:

Pests	Entrust	
	(oz/acre)	Dilute Spray (oz/100 gal)
banana rust thrips <sup>1</sup>	2.5	0.75
caterpillars		
Hawaiian flower 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. Dilute sprays assume an average volume of 300 gallons per acre.

#### Specific Use Directions:

**Application Timing:** Apply no later than 2 weeks after bunch emergence and before flower petals senesce and again 1 to 2 days before bunch cover.

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

**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 8 weeks of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.
- Do not apply more than a total of 9 oz of Entrust (0.45 lb ai spinosad) per acre per crop
- Do not make more than 4 applications per crop or apply more than 6 times per calendar year.

**Bulb Vegetables**

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

**Pests and Application Rates:**

Pests	Entrust (oz/acre)
armyworms dipteran leafminers European corn borer fleabeetle loopers	1 - 2
thrips (suppression) <sup>1</sup>	1.25 - 2.5

<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. 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 specified 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 9 oz of Entrust (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	Entrust (oz/acre)
armyworms cherry fruitworm cranberry fruitworm currant fruitfly fireworms leafrollers light brown apple moth loopers thrips <sup>1</sup>	1.25 - 2

<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 Entrust per acre will depend on plant size and volume of foliage present and pest pressure. Choose a lower rate for light infestations and/or small plants and a higher rate 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 9 oz of Entrust (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	Entrust (oz/acre)
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beet armyworm bertha armyworm green fruitworm leafrollers light brown apple moth looper sawfly western raspberry fruitworm	1.25 - 2
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**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:** The amount of Entrust per acre will depend on 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 9 oz of Entrust (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	Entrust (oz/acre)
citrus leafminer citrus orangedog citrus peelminer citrus thrips <sup>1</sup>	1.25 - 3

<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 rate per acre of Entrust will depend on tree size and pest pressure. Use a lower rate for light infestations and/or small trees and a higher rate 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 Entrust 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 9 oz of Entrust (0.45 lb ai spinosad) per acre per crop.

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

Cole crops (*Brassica* vegetables) including broccoli, broccoli raab, Brussels sprouts, cabbage, Chinese broccoli, Chinese cabbage (bok choy), Chinese cabbage (napa), Chinese mustard cabbage (gai choy), cauliflower, cavalo, collards, kale, kohlrabi, mizuna, mustard greens, mustard spinach, rape greens

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

**Pests and Application Rates:**

Pests	Entrust (oz/acre)
diamondback moth	0.5 – 1.25
cabbage looper imported cabbageworm	1 – 2
armyworms (including beet armyworm) leafminers <sup>1</sup> thrips <sup>1</sup>	1.25 – 3
flea beetle (suppression)	1.25 – 2.5

<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 Entrust 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 9 oz of Entrust (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 (Field Corn, Sweet Corn, Popcorn, and Corn Grown for Seed) and Teosinte

### Pests and Application Rates:

Pests	Entrust (oz/acre)
armyworms European corn borer	0.5 - 2
beet armyworm corn earworm southwestern corn borer western bean cutworm	1 - 2

### Specific Use Directions:

**Application Timing:** Scout for European corn borer and armyworms with enough regularity to monitor egg laying and egg hatch. Applications of Entrust® Naturalyte® insect control 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:** Entrust may be applied to corn by chemigation at labeled rates. Refer to the Application by Chemigation section for application guidelines for chemigation.

### Restrictions:

#### Sweet Corn, Popcorn, Corn Grown for Seed

- **Preharvest Interval:** Do not apply within 28 days of fodder harvest, 1 day of grains harvest or 7 days of forage harvest.
- Do not apply more than 9 oz of Entrust (0.45 lb ai spinosad) per acre per year.

#### Field Corn and Teosinte

- **Preharvest Interval:** Do not apply within 28 days of grain or fodder harvest or within 7 days of forage harvest.
- Do not apply more than 3.75 oz of Entrust (0.188 lb ai spinosad) per acre per year.

## Cotton

### Pests and Application Rates:

Pests	Entrust (oz/acre)
European corn borer cotton bollworm (pre-bloom) cotton leafperforator	1 - 2



25/47

tobacco budworm	
armyworms (including beet armyworm, fall armyworm)	1.25 – 2
cotton bollworm (post- bloom)	
leafminers	
loopers (including soybean looper, cabbage looper)	
saltmarsh caterpillar	
thrips	

**Specific Use Directions:**

**Application Timing:**

**Tobacco Budworm and/or Cotton Bollworm:** For the most effective control, fields should be scouted twice per week and Entrust applied when the majority of the population is within the time of blackhead egg stage to 1/8-inch larval length. The following table illustrates the size of development of worms in relation to age and stage of development (instar) as a guide to timing treatments for optimum control:

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

<sup>1</sup>**Note:** A scouting schedule of only once per week is risky since hatching worms will have grown to 3rd instar before the next scouting observation has determined the need to spray.

**Beet Armyworm:** Economic thresholds vary with local conditions and sampling methods. The following is an example of one such method: apply Entrust when field scouting reveals 3 or more occurrences of egg hatch or larval feeding per 100 feet of row.

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

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

**Resistance Management:** Do not make more than 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. For **tobacco budworm and/or cotton bollworm** where early season conservation of beneficial insects is practical, use Entrust to control the 1st and 3rd generation of tobacco budworm and/or cotton bollworm. Where conservation of beneficial insects is not as critical (for example, fields have received non-selective early season treatments for boll weevil or lygus bugs), use Entrust to control either the 2nd or 3rd generation of tobacco budworm and/or cotton bollworm.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 28 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 5 days apart for high rates of application.
- Do not apply more than a total of 9 oz of Entrust (0.45 lb ai spinosad) per acre per growing season.

### Cranberry (Insect Suppression)

**Pests and Application Rates:**

Pests	Entrust (oz/acre)
armyworms currant fruitfly fireworms leafrollers light brown apple moth loopers sparganothis fruitworm thrips	1.25 – 3

**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 on 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:** Entrust may be applied to cranberry by chemigation at labeled rates. Refer to the Application by Chemigation 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 9 oz of Entrust (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	Entrust (oz/acre)
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27/47

armyworm cabbage looper melon worm pickleworm rindworm	1.25 – 2.5
leafminers <sup>1</sup> thrips <sup>1</sup>	2 – 2.5

<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 Entrust<sup>®</sup> Naturalyte<sup>®</sup> insect control 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 9 oz of Entrust (0.45 lb ai spinosad) per acre per season.

#### Fig

##### Pests and Application Rates:

Pests	Entrust	
	(oz/acre)	Dilute Spray (oz/100 gal)
navel orangeworm	1.25 - 3	0.3 – 0.75

#### Specific Use Directions:

**Application Timing:** Apply Entrust as 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 section). 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 rate per acre of Entrust will depend on tree size and volume of foliage present and pest pressure. Choose a higher rate for large trees or heavy infestations.

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

**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.
- Do not apply more than a total of 9 oz of Entrust (0.45 lb ai spinosad) per acre per crop.

**Fruiting Vegetables and Okra**

Fruiting vegetables including eggplant, ground cherry, pepino, pepper (except black), tomatillo, tomato

**Pests and Application Rates:**

Pests	Entrust (oz/acre)
lepidopterous larvae (maintenance only)	0.5 - 1
Colorado potato beetle European corn borer hornworms loopers tomato fruitworm	1 - 2
armyworms (including beet armyworm) flea beetle flower thrips <sup>1,2</sup> thrips palmi <sup>1,2</sup> tomato pinworm	1.25 - 2.5
leafminers <sup>1</sup> ( <i>Liriomyza</i> spp.)	2 - 3

<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 Entrust 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 9 oz of Entrust (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:**

Pests	Entrust (oz/acre)
climbing cutworms grape berry moth grape leaffolder grape leaf skeletonizer light brown apple moth omnivorous leafroller orange tortrix thrips	1.25 – 2.5

**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 9 oz of Entrust (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.

**Grass Crops, Grass Grown for Seed, Pastures and Rangeland**

**Pests and Application Rates:**

Pests	Entrust (oz/acre)
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30/47

beet armyworm fall armyworm southern armyworm true armyworm	0.63 – 1.25
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**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 on the product label. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional recommendations applicable to your area.

**Application Rate:** Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

**Resistance Management:** Do not apply more than 3 times in any 21-day period. Whenever Entrust is applied up to 3 times in succession, this should be followed by no use of Entrust for a 21-day period or rotation to another insecticide class. Do not make more than 6 applications per season.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 3 days of harvest for hay or fodder. There is no preharvest interval for forage.
- Do not apply more than a total of 3.75 oz of Entrust (0.186 lb ai spinosad) per acre per season.

**Herbs****(Insect Suppression)**

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	Entrust (oz/acre)
armyworms loopers thrips	1.25 - 2

**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 larger larvae or high infestations and/or larger plant volume. Heavy 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 11 oz of Entrust (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.

**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:**

<b>Pests</b>	<b>Entrust (oz/acre)</b>
diamondback moth	0.5 - 1
cabbage looper imported cabbage worm	1 - 2
armyworms (including beet armyworm)	1.25 - 2.5
leafminers <sup>1</sup> thrips <sup>1</sup>	2 - 3

<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 9 oz of Entrust (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	Entrust (oz/acre)
European corn borer (eggs and larvae)	1 - 2
armyworms corn earworm loopers	1.25 - 2
leafminers <sup>1</sup> thrips <sup>1</sup>	1.5 - 2

<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 end of the rate range to control eggs and larvae every 3 days before they enter the plant. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional recommendations for your area.

**Application Rate:** Apply 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 9 oz of Entrust (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 3.75 oz of Entrust (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	Entrust (oz/acre)
armyworms cutworms dipteran leafminers <sup>1</sup> loopers thrips (suppression) <sup>1</sup>	1.25 - 3

<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. 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 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:** 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 9 oz of Entrust (0.45 lb ai spinosad) per acre per crop
- Do not make more than 4 applications per calendar year or more than 3 applicatoins per crop.

**Ornamentals (Herbaceous and Woody) Growing Outdoors, in Nurseries (Including Conifer Seed Orchards), or in Greenhouses**

**Pests and Application Rates:**

Pests	Entrust oz/gallon	Entrust oz/100 gallons	Entrust oz/acre
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<p>chrysomelid leaf feeding beetles, such as but not limited to:  elm leaf (1)  viburnum leaf (larvae)  willow leaf (1)</p> <p>lepidopterous larvae, such as but not limited to:  azalea caterpillar  bagworm  beet armyworm  cabbage looper  California oakworm  cankerworm  diamondback moth  E. tent caterpillar  fall webworm  Florida fern caterpillar  geranium budworm  gypsy moth  light brown apple moth  oblique banded leafroller  oleander caterpillar  orange striped oakworm  spruce budworm  tussock moths (hickory, whitemarked)  W. tent caterpillar  winter moth  yellownecked caterpillar (2)</p> <p>sawfly larvae, such as but not limited to:  European pine  pear  redheaded pine</p> <p>shore fly</p> <p>thrips (exposed) in greenhouse settings, such as but not limited to: (3)  Cuban laurel  western flower</p>	<p>0.01 (0.28 gm)</p>	<p>1 (28 gm)</p>	<p>2 (56 gm)</p>
<p>dipterous gall midges  pinyon spindlegall</p> <p>thrips (exposed) in outdoor settings, such as but not limited to:  Cuban laurel  western flower (3)</p>	<p>0.017 (0.48 gm)</p>	<p>1.7 (48 gm)</p>	<p>3 (85 gm)</p>
<p>dipterous leafminers, such as but not limited to:  serpentine (4)  emerald ash borer (5)  lewis mites  Nantucket pine tip moth  spider mites, such as but not limited to:  spruce  two-spotted (6) (See 6 below for mite suppression/control expectations)</p>	<p>0.031 (0.89 gm)</p>	<p>3.1 (89 gm)</p>	<p>3 (85 gm)</p>

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

**Pest-Specific Use Directions (for pest control in the greenhouse or nursery, also refer to Greenhouse Pest Resistance Avoidance Recommendations):**

1. **Elm leaf beetle** and **willow leaf beetle** (adults and larvae): For effective control, apply in the spring or early summer when feeding is observed.
2. For effective control of the following lepidopterous larvae:
  - **Bagworms:** Apply when bags are small and larvae are actively feeding.
  - **Beet armyworms:** Apply when larvae are small.
  - **Tent caterpillars** and **fall webworms:** Apply early when webs are first observed and direct the spray into the web and surrounding foliage within at least 3 feet of the nest.
  - **Gypsy moth larvae:** Apply when larvae are small and all eggs have hatched.
  - **Spruce budworms:** Apply when larvae are exposed and actively feeding.
3. **Exposed thrips (Cuban laurel and western flower):** For effective control, apply early at first signs of infestation and repeat until infestation is controlled. 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.
4. **Serpentine leafminers:** For effective control, apply early when stippling or mining of leaves is first observed and repeat until infestation is controlled. Three sequential applications at 7-day intervals can maximize control. Addition of a nonionic spray adjuvant such as DYNE-AMIC spray adjuvant at 0.1% v/v in greenhouse settings has been shown to enhance control of leafminers (follow surfactant manufacturer's label recommendations).
5. Apply to foliage and bark of tree when adult **emerald ash borer** are first observed emerging from the bark or when adult emerald ash borer are first noticed feeding on the leaves of the tree. Reapply every 7 to 10 days until no additional adult emerald ash borer activity is observed. Application to trees already heavily infested may not prevent the eventual loss of the tree due to existing pest damage and tree stress.
6. **Spruce spider mites** and **two-spotted spider mites:** Apply when spider mites are first observed prior to webbing and before mite populations have become severe. Reapply after 7 to 10 days (3 to 5 days in greenhouses and structures that can be altered to be closed or open) to contact newly hatched nymphs and repeat until infestation is managed. **Uniform coverage of both upper and lower leaf surfaces is critical.**

**Note:** Control of spider mites with Entrust in certain research trials has been variable. The variability between these evaluations is not well understood but may be due to late application timing when mite populations and webbing were severe, poor spray coverage of both the upper and lower leaf surfaces, or interaction of the leaf surface with residues of Entrust. Addition of a nonionic spray adjuvant such as Activate Plus, DYNE-AMIC, Joint Venture, Phase, and Thoroughbred at 0.1% v/v in greenhouse settings and at label rates in outdoor settings has been shown to improve spray coverage and enhance control of spider mites (follow surfactant manufacturer's label recommendations).

**Specific Use Directions:**

**Application Timing:** Dilute Entrust in water and apply using suitable hand or power-operated application equipment (such as, but not limited to, portable pump-up, backpack, hydraulic, boom) in a manner to provide complete and uniform plant coverage. 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 Entrust in lath and shadehouses is permitted.

**Application Rate:** Entrust may be used up to a maximum labeled rate of 0.031 oz per gallon (3.1 oz per 100 gallons, 3 oz per acre) per application on trees and ornamentals as a general treatment regardless of the target insect pest. Use recommended pest specific rates when a single insect pest or group of insect pests within a rate category is the only intended target.

**Spray Volume:** Attempt to penetrate dense foliage, but avoid over-spraying to the point of excessive runoff. Uniform coverage of both upper and lower leaf surfaces is critical for effective insect control.

36/47

**Chemigation:** Entrust may be applied to ornamentals by chemigation at labeled rates. Refer to the Application by Chemigation section for application guidelines for chemigation.

**Phytotoxicity:** Entrust has been tested alone on a wide variety of herbaceous and woody ornamental plants without phytotoxic symptoms. However, because it is not possible to test all possible tank mix combinations (including adjuvants) and ornamental plant species, varieties, and cultivars, and because environmental factors and varietal and plant stage of growth may affect phytotoxic expression, it is recommended that a small group of test plants be treated at the anticipated use rate of Entrust either alone or in tank mix combinations and observed for at least 5 to 7 days to determine phytotoxicity before treating large numbers of those plants. **Note:** The professional user assumes responsibility for determining if Entrust is safe to treated plants when applied either alone or in tank mixtures under commercial growing conditions. Research has demonstrated that some spotting of saintpaulia (African violet) flowers may occur.

**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.

**Restrictions:**

- **Minimum Treatment Interval:** Except for greenhouses and structures that can be altered to be closed or open, do not make applications less than 7 days apart.
- Do not apply more than a total of 9 oz of Entrust (0.45 lb ai spinosad) per acre per year.

**Peanut**

(Not for Use in California)

**Pests and Application Rates:**

Pests	Entrust (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 tobacco budworm velvetbean caterpillar	1 - 2

**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 5.6 oz of Entrust (0.28 lb ai spinosad) per acre per crop or make more than 3 applications per calendar year.
- **Grazing Restrictions:** 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, loquat, mayhaw, pears, quince

**Pests and Application Rates:**

Pests	Entrust	
	(oz/acre)	Dilute Spray (oz/100 gal)
leafminers <sup>1</sup> spotted tentiform western tentiform	1.5- 3	0.5 - 1
apple maggot (suppression) codling moth light brown apple moth leafrollers oblique-banded pandemis oriental fruit moth thrips <sup>1</sup> tufted apple budmoth	2 - 3	0.67 - 1

<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 on 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 Entrust per acre will depend on tree size and pest pressure. Choose

lower rates for light infestations and/or small trees and the higher rates for heavy infestations and/or larger trees.

**Spray Volume:** Dilute sprays are sprayed to the point of runoff. The application rate range in the table is based on a spray volume of 300 gallons per acre. Gallonage of dilute sprays will vary depending on 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. Avoid treating 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 9 oz of Entrust (0.45 lb ai spinosad) per acre per crop.
- Do not apply more than 3 sprays targeted at leafrollers per season.

**Potatoes, Tuberous and Corm Vegetables, and Artichoke**

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

**Pests and Application Rates:**

Pests	Entrust (oz/acre)
Colorado potato beetle European corn borer	1 - 2
armyworms artichoke plume moth dipteran leafminers ( <i>Liriomyza</i> ) loopers thrips <sup>1</sup>	1.5 - 3

<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:** Entrust may be applied to potatoes by chemigation at labeled rates. Refer to the Application by Chemigation 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

39/47

not apply Entrust 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 6.5 oz (7.5 oz for artichoke) of Entrust (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:**

Crop	Pests	Entrust (oz/acre)
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>	1 - 2
celeriac edible burdock oriental radish radish rutabaga turnip		
garden beet sugar beet	Colorado potato beetle European corn borer	1 - 2
	armyworms artichoke plume moth dipteran leafminers ( <i>Liriomyza</i> ) loopers thrips <sup>1</sup>	1.5 - 3

<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 specified 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 Entrust 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 6.5 oz of Entrust (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.

Do not apply more than a total of 7 oz of Entrust (0.3 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 6 oz of Entrust (0.28 lb ai spinosad) per acre per crop or make more than 3 applications per calendar year.

**Small Cereal Grains and Grain Amaranth**

Small cereal grains including barley, buckwheat, milo, oats, pearl millet, proso millet, rye, sorghum, triticale, wheat

**Pests and Application Rates:**

Pests	Entrust (oz/acre)
cereal leaf beetle	0.5 - 2
armyworms corn earworm (headworm) grasshoppers (suppression) southwestern corn borer webworms	1 - 2

**Specific Use Directions:**

**Application Timing:** Scout for **armyworms** with enough regularity to monitor egg laying and egg hatch and treat when thresholds are reached. Applications of Entrust 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



41/47

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 5.6 oz of Entrust (0.28 lb ai spinosad) per acre per year.
- Do not allow cattle to graze treated area until spray has dried.

**Soybean**

**Pests and Application Rates:**

Pests	Entrust (oz/acre)
green clover worm soybean looper true armyworm velvet bean caterpillar	0.75 - 1
armyworms (such as fall armyworm, yellowstriped armyworm, beet armyworm) corn earworm (podworm) saltmarsh caterpillar	1 - 1.25

**Specific Use Directions:**

**Application Timing:** Treat when field counts or crop injury indicates damaging pest populations are present or developing. Time applications to treat small larvae and use sufficient spray volume to ensure good coverage. Use a higher rate in rate range for heavy infestations and/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 28 days of harvest.
- Do not apply more than a total of 3.72 oz of Entrust (0.186 lb ai spinosad) per acre per year.
- Do not feed treated forage or hay to meat or dairy animals.

**Stone Fruits**

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

**Pests and Application Rates:**

Pests	Entrust	
	(oz/acre)	Dilute Spray (oz/100 gal)
cherry fruit fly green fruitworm leafminers (such as spotted tentiform, western tentiform) <sup>1</sup>	1.25 - 2.5	0.42 - 0.83

42/47

leafrollers (such as oblique-banded fruit tree pandemis redbanded variegated) light brown apple moth oriental fruit moth peach twig borer thrips <sup>1</sup> western cherry fruit fly		
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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 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- 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 Entrust 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:** Choose 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.

**Spray Volume:** Dilute sprays are sprayed to the point of runoff. The application rate range in the table is based on a spray volume of 300 gallons per acre. Gallonage of dilute sprays will vary depending on 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. Avoid treating 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 9 oz of Entrust (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:**

43/47

Pests	Entrust (oz/acre)
armyworms, including beet armyworms. leafrollers light brown apple moth thrips <sup>1</sup>	1.25 – 2

<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 Entrust® Naturalyte® insect control at the dosages indicated by application as a foliar spray to control target pests. Use a higher rate in the specified range for larger larvae or moderate to severe pest infestations. 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 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 9 oz of Entrust (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	Entrust (oz/acre)

44/47

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	0.5 – 2.5
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**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 Entrust per acre will depend on 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 9 oz of Entrust (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	Entrust (oz/acre)
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45/47

katydids lepidopterous larvae avocado leafroller citrus peelminer cutworms fruit tree leafroller orange tortrix western tussock moth light brown apple moth thrips <sup>1</sup>	1.25 – 3
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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 Rate:** The amount of Entrust® Naturalyte® insect control per acre will depend on tree size and pest pressure. Choose a lower rate for light infestations and/or small trees and a higher rate for heavy infestations and/or large trees.

**Application Timing:** Treat when pests appear or in accordance with local economic thresholds. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

**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 9 oz of Entrust (0.45 lb ai spinosad) per acre per crop.
- In order to prevent or delay resistance development in thrips, do not apply Entrust 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	Entrust	
	(oz/acre)	Dilute Spray (oz/100 gal)
codling moth fall webworm filbert worm hickory shuckworm light brown apple moth navel orange worm oblique banded leafroller peach twig borer pecan nut casebearer redhumped caterpillar walnut husk fly	1.25 – 3	0.3 - 0.75

46/47

**Specific Use Directions:**

**Application Timing:** Apply Entrust 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 Entrust will depend on tree size and volume of foliage present and pest pressure. Choose a higher rate 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 on a spray volume of 400 gallons per acre. Gallonage of dilute sprays will vary depending on 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 apply treatments less than 7 days apart.
- Do not apply more than a total of 9 oz of Entrust (0.45 lb ai spinosad) per acre per crop.
- Do not apply more than 3 sprays targeted at leafrollers per season.

**Fire Ants – Mound Application in Turfgrass and Ornamentals, in Greenhouses, and in Other Outdoor Areas**

Recommended Dilution Rate	
Entrust per 1 gallon (oz)	Entrust per 10 gallons (oz)
0.0159 (0.45 gm)	0.159 (4.5 gm)

**Specific Use Recommendations:**

**Fire ants such as red imported:** Apply diluted Entrust to individual fire ant mounds as a drench application. Use 1 to 2 gallons per mound depending on the mound size. For mounds less than 8 inches in diameter, use 1 gallon of dilution per mound. Use a higher volume, up to 2 gallons, on mounds 8 inches or larger in diameter. Apply approximately 10% of the dilution volume around the perimeter of the mound out to about 12 inches and pour the remaining volume directly on the mound. Do not disturb mounds prior to application. If possible, apply following a recent rainfall. For best results, apply in cool weather, 65 to 85°F, or in early morning or late evening hours. Treat new mounds as they appear. Pressurized sprays should not be used as they may disturb the ants and cause migration, reducing control.

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**Inherent Risks of Use**

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