

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



OFFICE OF  
PREVENTION, PESTICIDES,  
AND TOXIC SUBSTANCES

March 31, 2009

Timothy Wilson  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419

Dear Mr. Wilson:

Subject: (1) Amended labeling to add directions for use on the citrus crop group  
(2) Supplemental label for citrus crop group  
Actara® Insecticide  
EPA Registration No. 100-938  
EPA Decision No. 386465  
Your submission dated November 19, 2007

The proposed labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, is acceptable with the following comments:

Full Label

- On page 10, revise the heading "Operating Instructions for All Recommended Types of Irrigation Systems" so it reads, "Operating Instructions for All Specified Types of Irrigation Systems."
- On page 11, under the Calibration and Application Instructions section, revise the first sentence so it reads, "Actara must be applied under the schedule specified in the Crop Use Directions, not according to the irrigation schedule, unless the events coincide."
- FOR ALL CROPS, move the 'Maximum Actara Allowed per Growing Season' bullet so it appears as the first bullet under the Use Restrictions section.
- Under the Crop Use Directions, delete 'White Sapote.' White sapote is not currently covered by Crop Group 10.

- Under the Citrus Fruit Crop Group heading, delete the asterisk and corresponding note (i.e. “\* and other cultivars and/or hybrids of these). Other cultivars and hybrids are not currently covered by Crop Group 10.
- Under the Citrus Fruit directions for use, correct the spelling of “growing” in the ‘Maximum Platinum Allowed per Growing Season’ bullet.

Supplemental Label

- The sentence “All applicable directions...are to be followed” must be revised to read, “All applicable directions...must be followed.”
- Under the Crop Use Directions, delete ‘White Sapote.’
- Under the Citrus Fruit Crop Group heading, delete the asterisk and corresponding note (i.e. “\* and other cultivars and/or hybrids of these).
- Move the ‘Maximum Actara Allowed per Growing Season’ bullet so it appears as the first bullet under the Use Restrictions section.
- Correct the spelling of “growing” in the ‘Maximum Platinum Allowed per Growing Season’ bullet.
- Revise the sentence “Refer to Pollinator Precautions section” so it reads “Refer to Pollinator Precautions below.”

In addition, as a condition of registration, you must submit the following within 12 months from the date of this letter:

- Whole Sediment Acute Toxicity Test for Freshwater Invertebrates (850.1735): A 28-day study measuring survival, growth, and emergence of *Chironomus riparius* exposed to pesticide-spiked sediment.
- Field Test for Pollinators (850.3040): Field studies at maximum proposed label rates using a crop attractive to bees (e.g., pears or apples) for seed treatment, foliar, and soil applications. These three studies must be conducted according to EPA-approved protocols and must examine the exposure and effects to honey bee adults and brood. The studies must also measure the amount of thiamethoxam translocated to the nectar and pollen of the target crop and potential adverse effects, including sublethal effects.
- Residue Analytical Method (860.1340): A revised version of Method AG-675 which includes the full extraction steps for plant and livestock commodities, including the microwave extraction step for liver. (The revised method will be forwarded to the Food and Drug Administration for inclusion in PAM Vol. II.)
- Immunotoxicity Study (870.7800): This study is now required under the new 40 CFR Part 158 data requirements.

Stamped copies are enclosed for your records. Please submit two copies of your final printed labeling before you release the product for shipment. Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). If you have any questions, please contact Julie Chao by phone at: (703) 308-8735, or by email at: [chao.julie@epa.gov](mailto:chao.julie@epa.gov).

Regards,



Venus Eagle  
Insecticide-Rodenticide Branch  
Registration Division (7505P)

Enclosure

4/42

**SUPPLEMENTAL LABEL**



**Syngenta Crop Protection, Inc.**  
P.O. Box 18300  
Greensboro, NC 27419-8300

**SUPPLEMENTAL LABEL FOR ACTARA® INSECTICIDE FOR:**  
• **DIRECTIONS FOR USE ON THE CITRUS CROP GROUP**

Active Ingredient:	
Thiamethoxam <sup>1</sup> .....	25.0%
Other Ingredients:	75.0%
Total:	100.0%

<sup>1</sup>CAS No. 153719-23-4

Actara is a water-dispersible granule.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

EPA Reg. No. 100-938

**SCP 938S-L3**

All applicable directions, restrictions and precautions on the EPA-registered label are to be followed.

Before using Actara Insecticide, as permitted according to this supplemental label, read and follow all applicable directions, restrictions, and precautions on the EPA registered label on or attached to the pesticide product container. This Supplemental Labeling contains revised use instructions and or restrictions that may be different from those that appear on the container label. This Supplemental Labeling must be in the possession of the user at the time of pesticide application. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

ACCEPTED  
With COMMENTS  
In EPA Letter Dated:  
MAR 31 2009

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

100-938

**DIRECTIONS FOR USE**

**CROP USE DIRECTIONS**

Crop	Pest	Rate Per Acre Per Application
<b>Citrus Fruit Crop Group*</b> including: Calamondin Citrus citron Citrus hybrids (includes chironja, tangelo, & tangor) Grapefruit Kumquat Lemon Lime Mandarin (tangerine) Orange, sour Orange, sweet Pummelo Satsuma mandarin White Sapote	Aphids Leafhoppers	3.0 – 4.0 oz./A
	Asian Citrus Psyllid Citrus Black Fly Citrus Leafminer Mealybugs Sharpshooters Soft Scales Whiteflies	4.0 – 5.5 oz./A
	Ants (except fire, harvester, carpenter and Pharoah ants) Armored Scales Citrus Root Weevil Adults Crickets Fruit Fly Grasshoppers Katydid Plant Bugs Stink Bugs Thrips (Foliage Feeding)	4.5 – 5.5 oz./A

\* and other cultivars and/or hybrids of these.

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. For scales, time the applications to coincide with the crawler stage. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval (PHI):** 0 Days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 11.0 oz./Acre (0.172 lbs. a.i./A) of Actara or 0.172 lb. a.i. of thiamethoxam-containing products per acre per growing season.
- **Minimum Interval between Applications:** 7 days.
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications. Aerial application may result in slower activity and reduced control compared to ground applications.

**Refer to Pollinator Precautions section.**

**Refer to Resistance Management section on container labeling.**

**Pollinator Precautions**

- Actara is highly toxic to bees exposed to direct treatment or residues on blooming crops.
  - For **apples**, do not apply Actara after pre-bloom (early pink growth stage) or before post bloom (petal fall growth stage).
  - For **citrus**, do not apply during pre-bloom or during bloom when bees are actively foraging.

- For **pears**, do not apply Actara after pre-bloom (green cluster stage) or before post bloom (petal fall growth stage).
- For **stone fruit**, do not apply Actara between the pre-bloom (swollen bud) and post bloom (petal fall) growth stages.
- Do not apply Actara or allow it to drift to blooming crops if bees are foraging in the treatment area. This is especially critical if there are adjacent orchards that are blooming. (Refer to **Recommendations to Avoid Spray Drift** for additional information).
- **After an Actara application, wait at least 5 days before placing beehives in the treated field.**
- If bees are foraging in the ground cover and it contains any blooming plants or weeds, always remove flowers before making an application. This may be accomplished by mowing, disking, mulching, flailing, or applying a labeled herbicide.
- Consult with your local cooperative extension service or state agency responsible for regulating pesticide use for additional pollinator safety practices.

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Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300  
ACT938S-L3 (Supplemental citrus)clean-lg-2-11-09

7/42

(Booklet)

Actara®

Insecticide

GROUP 4A INSECTICIDE

For control of certain insect pests infesting listed crops

Active Ingredient:	
Thiamethoxam <sup>1</sup> .....	25.0%
Other Ingredients:	75.0%
Total:	100.0%

<sup>1</sup>CAS No. 153719-23-4

Actara is a water-dispersible granule.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See additional precautionary statements and directions for use in booklet.

EPA Reg. No. 100-938

EPA Est. XXXX

Product of xxxxx

Formulated in the USA

SCP 938A-L(draft citrus)	1 lb. 14 oz. (30 oz.)
SCP 938A-L(draft citrus)	7.5 lbs. (120 oz.)

1 pound 14 ounces (30 oz.)  
 7 pounds 8 ounces (120 oz.)  
 Net Weight

**ACCEPTED**  
**With COMMENTS**  
**In EPA Letter Dated:**  
**MAR 31 2009**  
**Under the Federal Insecticide, Fungicide**  
**and Rodenticide Act, As amended, for the**  
**pesticide Registered under EPA Reg. No:**

100-938

<b>FIRST AID</b>	
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b> For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call <b>1-800-888-8372</b>	
<b>NOTE TO PHYSICIAN</b> There is no specific antidote if Actara is ingested. Induce emesis or lavage stomach. Treat symptomatically.	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if absorbed through skin, swallowed, or inhaled. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Avoid breathing dust or spray mist. Wash thoroughly with soap and water after handling, and before eating, drinking, chewing gum, or using tobacco. Remove and wash clothing before reuse.



**Personal Protective Equipment (PPE)**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material – Category A (e.g., natural rubber ≥ 14 mils)
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Control Statements**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations**

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**Environmental Hazards**

This pesticide is toxic to wildlife and highly toxic to aquatic invertebrates.

This product is highly toxic to bees exposed to direct treatment or to residues on blooming crops. Do not apply this product or allow it to drift to blooming crops if bees are foraging in the treatment area.

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

- **Surface Water Advisory**

This product may impact surface water quality due to spray drift and runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of thiamethoxam water from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecast to

occur within 48 hours. (See manual at the following Internet address:  
<http://www.wsi.nrcs.usda.gov/products/W2Q/pest/core4.html>).

- **Ground Water Advisory**

Thiamethoxam has properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

- **Spray Drift Advisory**

Do not allow this product to drift.

**Physical or Chemical Hazards**

Do not use, pour, spill, or store near heat or open flame.

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**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions, or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

### DIRECTIONS FOR USE

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

Only use Actara in accordance with directions on this label or in separately published Syngenta supplemental labeling directions for this product.

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.

Do not apply Actara or allow it to drift onto blooming plants if bees are foraging in the treated area.

Do not use Actara in nurseries, greenhouses, plant propagation houses, or on any plants grown for use as transplants.

#### 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 12 hours.**

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

- Coveralls
- Chemical-resistant gloves made of any waterproof material – Category A (e.g., natural rubber ≥ 14 mils)
- Shoes plus socks

**FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR INSECT CONTROL, AND/OR ILLEGAL RESIDUES.**

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## USE INFORMATION

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Actara controls many sucking and chewing insects through contact and ingestion on the crops listed on this label.

For best performance, always follow these directions:

- Apply Actara when insect pest populations begin to build, but before populations reach economically damaging levels. Economic thresholds for pests controlled by Actara may be available from your local agricultural authorities.
- Actara is a selective insecticide, which should have minimal impact on beneficial arthropods, and its use is compatible with integrated pest management programs. However, Actara is highly toxic to bees exposed to direct treatment or to residues on blooming crops and weeds.
- Actara is rapidly taken up into foliage after application. However, thorough spray coverage is essential for optimal performance. Apply Actara in sufficient water to ensure good coverage. See specific application information in the **Crop Use Directions** section of this label. The use of higher water volumes will generally result in better coverage, especially under adverse conditions (e.g., hot, dry) or where a dense plant canopy exists. The use of a spray adjuvant may improve spray coverage but is not required.
- Actara is rainfast once the spray solution has dried on treated plants.
- Actara may aid in the suppression of some pests. Suppression can mean either inconsistent control (good to poor), or consistent control at a level below that generally considered acceptable for commercial control.
- Actara has a wide margin of plant safety when used in accordance with this label.

### **Resistance Management**

Some insect pests are known to develop resistance to products after repeated use. Because resistance development cannot be predicted, the use of this product should conform to sound resistance management strategies established for the crop and use area. Syngenta encourages responsible product stewardship to ensure effective long-term control of the insects on this label.

Actara contains a Group 4A insecticide (thiamethoxam, belonging to the neonicotinoid class of chemistry). Insect biotypes with acquired or inherent resistance to Group 4A insecticides may eventually dominate the insect population if Group 4A insecticides are used repeatedly as the predominant method of control for targeted species. This may result in partial or total loss of control of those species by Actara or other Group 4A insecticides.

### **In order to maintain susceptibility to this class of chemistry in insect species with high resistance development potential:**

- Avoid using a block of more than three consecutive applications of Actara and/or other Group 4A insecticides. (Do not exceed the allowable amount of Actara per acre per growing season.)

- Following a block of Group 4A insecticides, rotate to a block of applications of effective products with a different mode of action before using additional applications of Group 4A insecticides.
- Using a block rotation, along with other IPM practices, is considered an effective use strategy for preventing or delaying an insect's pest's ability to develop resistance to this class of chemistry.
- Do not use foliar applications of Actara or other Group 4A insecticides on crops previously treated with a long-residual, seed or soil applied Group 4A insecticides.

**Other Insect Resistance Management (IRM) practices include:**

- Incorporating IPM techniques into your insect control program.
- Monitoring treated insect populations for loss of field efficacy.
- Using tank-mixtures or premixes with insecticides from a different target site of action Group as long as the involved products are all registered for the same crop outlet and effective rates are applied.

**For additional information on Insect Resistance Management:**

- Contact your local extension specialist, certified crop advisor and/or product manufacturer for additional insect resistance management recommendations.
- Visit the Insecticide Resistance Action Committee (IRAC) on the web at <http://www.irac-online.org/>.

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**APPLICATION PROCEDURES AND SPRAY EQUIPMENT**

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**Ground Application**

Spray nozzles should be selected which will provide accurate and uniform spray deposition. Use spray nozzles which provide medium-sized droplets and reduce drift. To help insure accuracy, calibrate sprayer before each use. For information on spray equipment and calibration, consult nozzle manufacturers and/or State Extension Service specialists.

Apply Actara using sufficient water volume to provide thorough and uniform coverage. In situations where a dense canopy exists and/or pest pressure is high, use greater water volumes. The use of a spray adjuvant may improve spray coverage but is not required. Avoid making applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

*Precautions: (1) When using water volumes of 5-10 gals., fine-sized droplets may be used to improve spray coverage. (2) Select nozzles which produce the desired droplet sizes at the normal rated pressure range. (3) When spraying fine-sized droplets, carefully check **all** nozzles for flow and calibrate the sprayer. (4) The sprayer should travel at a uniform speed across the field. (5) Monitor environmental conditions and follow **Recommendations to Avoid Spray Drift** carefully.*

### **Aerial Application**

Apply Actara in water, using the minimum spray volume indicated in the **Use Directions** section of this label. Increase spray volume where practical to improve coverage. Avoid making application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

### **Recommendations to Avoid Spray Drift**

As with all crop protection products, it is important to avoid off-target movement. Do not allow spray to drift onto adjacent land, crops, or aquatic areas. Follow these recommendations to avoid spray drift:

- Make applications when wind velocity favors on-target product deposition (approximately 3-10 mph). Do not apply when wind velocity exceeds 10 mph. Avoid applications when wind gusts approach 10 mph.
- Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.
- Do not cultivate or plant crops within 25 ft. of the aquatic area as to allow growth of a vegetative filter strip.
- Do not make applications during temperature inversions. Inversions are characterized by stable air and increasing temperatures with increased height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Use the largest droplet size consistent with good pest control. Small droplets are more prone to spray drift, and can be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.
- Apply as close to target plants as practical to obtain a good spray pattern for adequate coverage. Applications more than 10 ft. above the crop canopy should be avoided.
- For aerial applications, the spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should be used and must not exceed 75% of wing span or rotor diameter.

### **Application Through Irrigation Systems (Chemigation) - Potatoes and Cranberry Only**

#### **Cranberry – Solid Set Sprinkler System Only (See Crop Use Directions)**

Actara alone or in combination with other products which are registered for application through sprinkler irrigation may be applied through irrigation systems. Apply this product only through center pivot, solid set, hand move, or moving wheel irrigation systems. Do not apply Actara through any other type of irrigation system. Lack of effectiveness or illegal pesticide residues

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. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

**Using Water from Public Water Systems:** DO NOT APPLY ACTARA THROUGH ANY IRRIGATION SYSTEM PHYSICALLY CONNECTED TO A PUBLIC WATER SYSTEM. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Actara may be applied through irrigation systems, which may be **supplied** by a public water system **only if** the water from the public water system is discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Any irrigation system using water supplied from a public water system must also meet the following requirements.

**Operating Instructions for All Recommended Types of Irrigation Systems**

1. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
2. The system must contain a functional check-valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
6. The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
7. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
8. Do not apply when wind speed favors drift beyond the area intended.



## Calibration and Application Instructions

Actara should be applied under the schedule specified in the specific crop use recommendations, not according to the irrigation schedule unless the events coincide.

In general, set the equipment to apply the minimum amount of water per acre. Run the system at 85 - 90% of the manufacturer's maximum rated travel speed.

The following calibration and application techniques are provided for user reference, but do not constitute a warranty of fitness for application through sprinkler irrigation equipment. Users should check with state and local regulatory agencies for potential use restrictions before applying any agricultural chemical through sprinkler irrigation equipment.

## Center Pivot Irrigation Equipment

**Notes:** (1) Use only drive systems that provide uniform water distribution. (2) Do not use end guns when chemigating Actara through center pivot systems because of non-uniform application. (3) Plug the first nozzle closest to the well-head to protect the water source.

1. Determine the size of the area to be treated.
2. Determine the time required to apply 0.1 – 0.25 inches of water over the area to be treated when the system and injection equipment are operated at normal pressures as recommended by the equipment manufacturer. Run the system at 80 - 95% of the manufacturer's rated maximum travel speed.
3. Using water, determine the injection pump output when operated at normal line pressure.
4. Determine the amount of Actara, and any tank mix partners, required to treat the area covered by the irrigation system.
5. Add the required amount of Actara, any tank mix partners, and sufficient water to meet the injection time requirements to the solution tank. (See **Mixing Procedures** section of this label.)
6. Make sure the system is fully charged with water before starting injection of the Actara solution. Time the injection to last at least as long as it takes to bring the system to full pressure.
7. Maintain constant agitation in the solution tank during the injection period.
8. Inject the specified amount of Actara per acre continuously for one complete revolution of the system.
9. Stop the injection equipment after treatment is completed. Continue to operate the system until the Actara solution has cleared all of the sprinkler heads.
10. Allow time for all lines to flush the pesticide through all nozzles before turning off irrigation water.

### **Solid Set, Hand Move, and Moving Wheel Irrigation Equipment**

1. Determine the acreage covered by the sprinklers.
2. Fill injector solution tank with plain water and calibrate the flow rate of the system to deliver the contents of the tank over a 20-40 minute time interval.
3. Determine the amount of Actara required to treat the area covered by the irrigation system.
4. Add the required amount of Actara, and any other tank mix partners, into the same quantity of water used to calibrate the injection period. (See **Mixing Procedures** section of this label.)
5. Operate the system at the same pressure and time interval established during the calibration.
6. Inject specified amount of Actara per acre for either a 20-40 minute period at the end of a regular irrigation set, or as a 20-40 minute injection as a separate application not associated with a regular irrigation to maximize retention of the insecticide by the foliage.
7. Stop injection equipment after treatment is completed. Continue to operate the system until the Actara solution has cleared the last sprinkler head. To ensure lines are flushed and free from remaining pesticides, a dye indicator may be injected into the lines to mark the end of the application period.

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### **MIXING PROCEDURES**

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Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean spray equipment before using this product. Vigorous agitation is necessary for proper dispersal of the product. Maintain maximum agitation throughout the spraying operation. Do not let the spray mixture stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area. Keep product container tightly closed when not in use.

#### **Actara Alone**

Add 1/2 of the required amount of water to the mix tank. With the agitator running, add the desired amount of Actara to the tank. Continue agitation while adding the remainder of the water. Begin application of the solution after Actara has completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

#### **Actara + Tank Mixtures**

Add 1/2 of the required amount of water to the mix tank. Start the agitator running before adding any tank mix partners. Add tank mix partners in this order: products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables) such as Actara, liquid flowables, liquids, emulsifiable concentrates, and surfactants / adjuvants. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all of the mixture has been applied.

**Note:** When using Actara in tank mixtures, add all products in water-soluble packaging to the tank before any other tank mix partner, including Actara. Allow the water-soluble packaging to

completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank.

If using Actara in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, precautions, and limitations, which appear on the tank mix product label. Do not exceed any label dosage rate, and follow the most restrictive label precautions and limitations. Do not mix this product with any product which prohibits such mixing. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are labeled.

**Compatibility**

Actara is compatible with most commonly used pesticides, crop oils, adjuvants, and nutritional sprays. However, since it is not possible to test all possible mixtures, the user should pre-test to assure the physical compatibility and lack of phytotoxic effect of any proposed mixtures with Actara. To determine the physical compatibility of Actara with other products, use a jar test, as described below.

Using a quart jar, add the proportionate amounts of the products to 1 qt. of water. Add wettable powders and water-dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

The crop safety of all potential tank mixes on all crops has not been tested. Before applying any tank mixture not specifically recommended on this label, the safety to the target crop should be confirmed.

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## CROP USE DIRECTIONS

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### Pollinator Precautions

- Actara is highly toxic to bees exposed to direct treatment or residues on blooming crops.
  - For **apples**, do not apply Actara after pre-bloom (early pink growth stage) or before post bloom (petal fall growth stage).
  - For **citrus**, do not apply during pre-bloom or during bloom when bees are actively foraging.
  - For **pears**, do not apply Actara after pre-bloom (green cluster stage) or before post bloom (petal fall growth stage).
  - For **stone fruit**, do not apply Actara between the pre-bloom (swollen bud) and post bloom (petal fall) growth stages.
- Do not apply Actara or allow it to drift to blooming crops if bees are foraging in the treatment area. This is especially critical if there are adjacent orchards that are blooming. (Refer to **Recommendations to Avoid Spray Drift** for additional information).
- **After an Actara application, wait at least 5 days before placing beehives in the treated field.**
- If bees are foraging in the ground cover and it contains any blooming plants or weeds, always remove flowers before making an application. This may be accomplished by mowing, disking, mulching, flailing, or applying a labeled herbicide.
- Consult with your local cooperative extension service or state agency responsible for regulating pesticide use for additional pollinator safety practices.

Crop	Pest	Rate Per Acre Per Application
Barley (ID, ND, OR, SD, and WA only)	Aphids	4.0 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels.
- **Pre-Harvest Interval (PHI):** 21 days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 8.0 oz./Acre (0.125 lb. a.i./A) of Actara or 0.125 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum interval between applications:** 7 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
<b>Berries</b>		
<b>Bushberry</b> Blueberry (high and low bush) Currant Elderberry Gooseberry Huckleberry	Aphids Cranberry Weevil Leafhoppers	3.0 - 4.0 oz./A
<b>Juneberry</b> <b>Lingonberry</b> <b>Salal</b>	Japanese Beetle Weevil Adults	4.0 oz./A
<b>Caneberry</b> Blackberry Loganberry Red & Black Raspberry	Aphids Leafhoppers	2.0 - 3.0 oz./A
	Japanese Beetle Stinkbugs Tarnished Plant Bug Weevil Adults Whiteflies	3.0 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval (PHI):** 3 days
- **Maximum Actara Allowed per Growing Season:**  
 Bushberry: Do not exceed a total of 12.0 oz./Acre (0.188 lb. a.i./A) of Actara or 0.188 lb. a.i. of thiamethoxam containing products per acre per growing season.  
 Caneberry: Do not exceed a total of 6.0 oz./Acre (0.094 lb. a.i./A) of Actara or 0.094 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 7 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
<b>Brassica (Cole) Leafy Vegetables</b>		
<b>Head &amp; Stem Brassica</b> Broccoli Broccoli, Chinese Brussels sprouts Cabbage Cabbage, Chinese mustard Cabbage, Chinese (napa) Cauliflower Cavalo broccolo Kohlrabi	Aphids Flea Beetles	1.5 - 3.0 oz./A
	Thrips Whiteflies	3.0 – 5.5 oz./A
<b>Leafy Brassica Greens</b> Broccoli, raab Cabbage, Chinese (bok choy) Collards Kale Mizuna Mustard greens Mustard spinach Rape greens	Aphids Flea Beetles	1.5 - 3.0 oz./A
	Thrips Whiteflies	3.0 – 5.5 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval (PHI):**  
 0 Days for Head & Stem Brassica  
 7 Days for Leafy Brassica Greens
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 11.0 oz./Acre (0.172 lb. a.i./A) of Actara or 0.172 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 7 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications. Allow spray to dry prior to harvest.

Refer to Pollinator Precautions section.  
 Refer to Resistance Management section.

Crop	Pest	Rate Per Acre Per Application
<b>Citrus Fruit Crop Group*</b> including:  Calamondin Citrus citron Citrus hybrids (includes chironja, tangelo, & tangor) Grapefruit Kumquat Lemon Lime Mandarin (tangerine) Orange, sour Orange, sweet Pummelo Satsuma mandarin White Sapote	Aphids Leafhoppers	3.0 – 4.0 oz./A
	Asian Citrus Psyllid Citrus Black-Fly Citrus Leafminer Mealybugs Sharpshooters Soft Scales Whiteflies	4.0 – 5.5 oz./A
	Ants (except fire, harvester, carpenter and Pharoah ants) Armored Scales Citrus Root Weevil Adults Crickets Fruit Fly Grasshoppers Katydids Plant Bugs Stink Bugs Thrips (Foliage Feeding)	4.5 – 5.5 oz./A

\* and other cultivars and/or hybrids of these.

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. For scales, time the applications to coincide with the crawler stage. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval (PHI):** 0 Days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 11.0 oz./Acre (0.172 lbs. a.i./A) of Actara or 0.172 lb. a.i. of thiamethoxam-containing products per acre per growing season.
- **Minimum Interval between Applications:** 7 days.
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications. Aerial application may result in slower activity and reduced control compared to ground applications.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section**



Crop	Pest	Rate Per Acre Per Application
Cranberry	Aphids Cranberry Flea Beetle Cranberry Weevil Leafhoppers	2.0 - 4.0 oz./A
	Japanese Beetle	4.0 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval (PHI):** 30 days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 12.0 oz./Acre (0.188 lb. a.i./A) of Actara or 0.188 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 7 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications. Actara may be applied through a solid set sprinkler irrigation system at 200-650 gals. total volume /A, and if applied during a regular irrigation set, only at the end of the irrigation set. For best results, it is recommended that 200-300 gals. total volume /A be used for irrigation application.
- **Do not** apply by air.
- **Do not** apply to flow-through bogs.
- **Do not** apply within 25 feet of bodies of water.
- **Do not** irrigate for the first 48 hours following application.
- **Do not** release water immediately following application; hold water within the bog system for 5 days following application prior to release.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
<b>Cucurbit Vegetables</b> Chayote Chinese waxgourd Citron melon Cucumber	Aphids Flea Beetles	1.5 - 3.0 oz./A
Edible gourd Gherkin <i>Momordica</i> species Muskmelon Pumpkin Squash: summer and winter Watermelon	Cucumber Beetles <sup>1</sup> Leafminers <sup>1</sup> Whiteflies	3.0 – 5.5 oz./A

**Use Restrictions:**

- \* **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- \* **Pre-Harvest Interval (PHI):** 0 days
- \* **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 11.0 oz./Acre (0.172 lb. a.i./A) of Actara or 0.172 lb. a.i. of thiamethoxam containing products per acre per growing season.
- \* **Minimum Interval Between Applications:** 5 days
- \* **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications. Allow spray to dry prior to harvest.

<sup>1</sup> Suppression

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
<b>Fruiting Vegetables</b> Eggplant Ground cherry Pepino	Aphids Colorado Potato Beetle Flea beetles Leafhoppers	2.0 - 3.0 oz./A
Peppers (bell, chili, cooking, pimento, and sweet) Tomatillo Tomato	Whiteflies Pepper Weevil Stink Bugs	3.0 – 5.5 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval (PHI):** 0 day
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 11.0 oz./Acre (0.172 lb. a.i./A) of Actara or 0.172 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 5 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications. Allow spray to dry prior to harvest.

**Refer to Pollinator Precautions section.**

**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
Globe Artichoke	Artichoke Aphid - ( <i>Capitophorus elaeagni</i> ) Leafhoppers Proba Bug	3.0 oz./A

**Use Restrictions:**

- \* **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- \* **Pre-Harvest Interval (PHI):** 4 days
- \* **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 6.0 oz./Acre (0.094 lb. a.i./A) of Actara or 0.094 lb. a.i. of thiamethoxam containing products per acre per growing season.
- \* **Minimum Interval Between Applications:** 7 days
- \* **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
Grapes	Japanese Beetle Leafhoppers Mealybugs Sharpshooters	1.5 - 3.5 oz./A

**Use Restrictions:**

- \* **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- \* **Pre-Harvest Interval (PHI):** 5 days
- \* **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 7.0 oz./Acre (0.109 lb. a.i./A) of Actara or 0.109 lb. a.i. of foliar applied thiamethoxam containing products per acre per growing season.
- \* **Minimum Interval Between Applications:** 14 days
- \* **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
<b>Leafy Vegetables (except Brassica)</b> Amaranth Arugula Cardoon Celery Celtuce Chervil Chinese celery Chrysanthemum: edible-leaved & garland Corn Salad Cress: Garden & upland Dandelion Dock Endive Fennel Lettuce: Head & Leaf Orach Parsley Purslane: Garden & Winter Radicchio Rhubarb Spinach (including New Zealand & Vine) Swiss chard	Aphids Flea Beetles Leafhoppers	1.5 - 3.0 oz./A
	Whiteflies	3.0 – 5.5 oz./A

**Use Restrictions:**

- \* **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- \* **Pre-Harvest Interval (PHI):** 7 days
- \* **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 11.0 oz./Acre (0.172 lb. a.i./A) of Actara or 0.172 lb. a.i. of thiamethoxam containing products per acre per growing season.
- \* **Minimum Interval Between Applications:** 7 days
- \* **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
Mint: Peppermint Spearmint	Aphids Fleahoppers Leafhoppers Mint Flea Beetles	1.5 - 3.0 oz./A
	Grasshoppers	3.0 - 4.0 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-harvest Interval (PHI):** 7 days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 12.0 oz./Acre (0.188 lb. a.i./A) of Actara or 0.188 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 14 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

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Crop	Pest	Rate Per Acre Per Application	Remarks
<p><b>Pome Fruit</b></p> <p>Apples Not for use in NY except via SLN NY-020001.</p> <p>Crabapples Loquat Mayhaw Quince</p>	<p><b>Prebloom:</b> Apple Aphid Apple Grain Aphid Green Peach Aphid Leafminers Mullein Bug (<i>Campylomma</i> species) Rosy Apple Aphid</p>	<p>4.5 oz./A</p>	<p>Apply before pests reach damaging levels. <b>Rosy Apple Aphid:</b> Apply when aphid colonies are first observed at the green tip through pink growth stage before leaf curling occurs. <b>Leafminers:</b> Apply when eggs are being deposited.</p>
	<p><b>Postbloom:</b> Leafhoppers</p>	<p>2.0 – 2.75 oz./A</p>	<p>Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.</p>
	<p><b>Postbloom:</b> Apple Aphid Apple Grain Aphid European Apple Sawfly Green Peach Aphid Leafminers Plum Curculio</p>	<p>4.5 - 5.5 oz./A</p>	<p>Apply before pests reach damaging levels. Apply higher rates for heavy infestations. <b>Leafminers:</b> To control first generation populations, make application immediately following petal fall. For control of second and third generations, make applications to coincide with egg deposition. Apply higher rates for heavy infestations. <b>Plum Curculio:</b> Make application immediately following petal fall. Additional applications of a different insecticide may be necessary if pest pressure continues.</p>



Crop	Pest	Rate Per Acre Per Application	Remarks
(Pome Fruit continued)  Pear Oriental Pear ( <i>Pyrus pyrifolia</i> )	<b>Prebloom:</b> Pear Psylla	5.5 oz./A	Apply before pests reach damaging levels.
	<b>Prebloom:</b> Apple Aphid	4.5 - 5.5 oz./A	Apply before pests reach damaging levels. Apply higher rates for heavy infestations.
	<b>Postbloom:</b> Pear Psylla	5.5 oz./A	Apply before pests reach damaging levels.
	<b>Postbloom:</b> Apple Aphid Comstock Mealybug Plum Curculio	4.5 - 5.5 oz./A	Apply before pests reach damaging levels. Apply higher rates for heavy infestations. <b>Comstock Mealybug:</b> Make application immediately following petal fall to control first generation crawlers. <b>Plum Curculio:</b> Make application immediately following petal fall. Apply higher rates for heavy infestations. Additional applications of a different insecticide may be necessary if pest pressure continues.
	Leafhoppers	2.0 - 2.75 oz./A	Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.

**Use Restrictions:**

- **Pre-Harvest Interval (PHI):**  
 35 day - Use rates exceeding 2.75 oz./A may not be applied closer than 35 days before harvest.  
 14 day - Application rates equal to or less than 2.75 oz./A may be applied up to 14 days before harvest.
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 16.5 oz./Acre (0.258 lb. a.i./A) of Actara or 0.258 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 10 days
- **Water volume:** Use a minimum of 50 GPA applied with ground equipment to ensure thorough coverage of foliage.
- **Do not apply by air.**

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
<b>Root Vegetables Subgroup (Except Sugarbeets)</b>		
Radish	Aphids Flea Beetles Leafhoppers	1.5 - 3.0 oz./A
	Whiteflies	3.0 - 4.0 oz./A
Carrot Celeriac Chicory Edible Burdock Garden Beet Ginseng Horseradish Oriental Radish Parsnip Rutabaga Salsify: Black Salsify Spanish Salsify Skirret Turnip Turnip Rooted Chervil Turnip Rooted Parsley	Aphids Flea Beetles Leafhoppers	1.5 - 3.0 oz./A
	Whiteflies	3.0 - 4.0 oz./A

**Use Restrictions:**

- \* **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- \* **Pre-Harvest Interval (PHI):** 7 days
- \* **Maximum Actara Allowed per Growing Season:**  
  - Radish** - Do not exceed a total of 4.0 oz./Acre (0.063 lb. a.i./A) of Actara or 0.063 lb. a.i. of thiamethoxam containing products per acre per growing season.
  - Other Root Vegetables** - Do not exceed a total of 8.0 oz./Acre (0.125 lb. a.i./A) of Actara or 0.125 lb. a.i. of thiamethoxam containing products per acre per growing season
- \* **Minimum Interval Between Applications:** 7 days
- \* **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications.

Refer to Pollinator Precautions section.  
Refer to Resistance Management section.

Crop	Pest	Rate Per Acre Per Application
Stone Fruit Apricot Chickasaw plum Damson plum Japanese plum Nectarine	Leafhoppers	2.0 - 2.75 oz./A
	Aphids	3.0 - 4.0 oz./A
Peach Plum Plumcot Prune (fresh) Sweet and tart cherry	Cherry Fruit Fly Plum Curculio Stink Bugs Tarnished Plant Bug Thrips	4.5 - 5.5 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval (PHI):** 14 days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 11.0 oz./Acre (0.172 lb. a.i./A) of Actara or 0.172 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 7 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 50 GPA for ground applications.
- **Do not** apply by air.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
Strawberry	Aphids Leafhoppers	1.5 – 3.0 oz./A
	Whiteflies	3.0 – 4.0 oz./A
	Lygus Bug (suppression) Weevil Adult	4.0 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval (PHI):** 3 days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 12.0 oz./Acre (0.188 lb. a.i./A) of Actara or 0.188 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 10 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 50 GPA for ground applications.
- **Do not** apply by air.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section**

Crop	Pest	Rate Per Acre Per Application
Tobacco	Aphids Flea Beetles Japanese Beetles	2.0 - 3.0 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Apply higher rates for heavy infestations.
- **Pre-Harvest Interval:** 14 days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 3.0 oz./Acre (0.047 lb. a.i./A) of Actara or 0.047 lb. a.i. of foliar applied thiamethoxam containing products per acre per growing season.
- **Water volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 20 GPA for ground applications.

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

Crop	Pest	Rate Per Acre Per Application
<b>Tuberous and Corm Vegetables</b> Arracacha Arrowroot Canna Cassava, Bitter and Sweet Chayote (root) Chinese artichoke Chufa Dasheen Ginger Jerusalem artichoke Leren Potato Sweet potato Tanier Turmeric Yams Yam bean	Colorado Potato Beetle Flea Beetle Potato Leafhoppers	1.5 – 3.0 oz./A
	Aphids	3.0 oz./A

**Use Restrictions:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Apply higher rates for heavy infestations.
- **Pre-harvest Interval:** 14 days
- **Maximum Actara Allowed per Growing Season:** Do not exceed a total of 6.0 oz./Acre (0.094 lb. a.i./A) of Actara or 0.094 lb. a.i. of foliar applied thiamethoxam containing products per acre per growing season.
- **Minimum Interval Between Applications:** 7 days
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications.
- **Chemigation:** use from 0.10-0.25 inches of water. (For more details: see application through irrigation systems for potatoes in **APPLICATION PROCEDURES AND SPRAY EQUIPMENT** section.)

**Refer to Pollinator Precautions section.**  
**Refer to Resistance Management section.**

**ROTATIONAL RESTRICTIONS**

Treated areas may be replanted immediately following harvest, or as soon as practical following the last application, with any crop listed on this label or to barley, canola, cotton, corn, cucurbit vegetables, legume vegetables, oilseed crops (rapeseed, Indian rapeseed, Indian mustard seed, field mustard seed, black mustard seed, flax seed, safflower seed, crambe seed and borage seed), sorghum, sunflower and wheat. Any cover crop planted for erosion control or soil improvement may be planted as soon as practical following the last application. However, the cover crop may not be grazed or harvested for food or feed. For all other crops, a 120 - day plant-back interval must be observed.

**STORAGE AND DISPOSAL**

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

**Storage**

Store in a cool, dry place.


**Pesticide Disposal**

Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

**Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures allowed by state and local ordinances.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes.

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For non-emergency (e.g., current product information) call  
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:  
Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, North Carolina 27419-8300

SCP 938A-L(draft citrus) 1 lb. 14 oz. (30 oz.)  
SCP 938A-L(draft citrus) 7.5 lbs. (120 oz.)

(Base Label)

Actara®

Insecticide

GROUP 4A INSECTICIDE

For control of certain insect pests infesting listed crops

Active Ingredient:	
Thiamethoxam <sup>1</sup> .....	25.0%
Other Ingredients:	75.0%
Total:	100.0%

<sup>1</sup>CAS No. 153719-23-4

Actara is a water-dispersible granule.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See additional precautionary statements and directions for use in booklet.

**AGRICULTURAL USE REQUIREMENTS**

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

EPA Reg. No. 100-938  
EPA Est. XXXXX

SCP 938A-L(draft citrus)	1 lb. 14 oz. (30 oz.)
SCP 938A-L(draft citrus)	7.5 lbs. (120 oz.)

1 pound 14 ounces (30 oz.)  
7 pounds 8 ounces (120 oz.)  
Net Weight



**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if absorbed through skin, swallowed or inhaled. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Avoid breathing dust or spray mist. Wash thoroughly with soap and water after handling, and before eating, dinking, chewing gum or using tobacco. Remove and wash clothing before reuse.

<b>FIRST AID</b>	
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<p><b>HOT LINE NUMBER</b>            For 24 Hour Medical Emergency Assistance (Human or Animal) or            Chemical Emergency Assistance (Spill, Leak, Fire, or Accident),            Call  <b>1-800-888-8372</b></p>	
<p><b>NOTE TO PHYSICIAN</b>            There is no specific antidote if Actara is ingested. Induce emesis or lavage stomach.            Treat symptomatically.</p>	

**Environmental Hazards**

This pesticide is toxic to wildlife and highly toxic to aquatic invertebrates.

This product is highly toxic to bees exposed to direct treatment or to residues on blooming crops. Do not apply this product or allow it to drift to blooming crops if bees are foraging in the treatment area.

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

**STORAGE AND DISPOSAL**

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

**Storage**

Store in a cool, dry place.

**Pesticide Disposal**

Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

**Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures allowed by state and local ordinances.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes.

**Refer to Surface Water Advisory, Ground Water Advisory, Spray Drift Advisory and Physical or Chemical Hazards sections in booklet.**

**Refer to Chemigation statement (potatoes and cranberry only) in booklet.**

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Manufactured for:

Syngenta Crop Protection Inc.

P.O. Box 18300

Greensboro, NC 27419-8300

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