

100-912

12-27-2001

1/29

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



OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

306  
17 5--606 5.17

December 27, 2001

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

Attention: John Hott

**Subject** Fulfillment  
EPA Reg. No. 100-912  
Amended Application for New Uses  
Your letter of October 31, 2001

**Labeling comments** We consider current labeling for this product to include a "Detachable Booklet" and an "Non-Detachable Container Label", which you called a "Base Label".

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, is acceptable, provided that you:

- A. submit and/or cite all data required for reregistration of your product under section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
- B. submit one (1) copy of final printed labeling with the following changes before you release the product for shipment.

**Labeling  
comments-  
continued**

1. Place the words "Detachable Booklet" on the Front Panel of this labeling, above the product name.
2. In your "Detachable Booklet", under the "STORAGE AND DISPOSAL" text, move the following text as a 2<sup>nd</sup> Paragraph under "Disposal":

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 clean up procedures and disposal of wastes.

3. Add the following sentence to the above text:

In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

4. Change "Base Label" to "Non-Detachable Container Label".
5. On the "Non-Detachable Container Label", change the referral statement to:

Refer to "Detachable Booklet" for additional precautionary statements and "Directions for Use".

**Minimum  
type size**

Make sure that you follow the enclosed "Minimum Type Size Requirements for Final Printed Labels".

**Existing  
Stocks**

Existing Stocks of previously approved labels may be used for 18 months.

**Failure to  
make  
changes**

This registration will be subject to cancellation in accordance with FIFRA sec. 6(e) if you do not comply with these conditions. Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the labeling is enclosed for your records.

3/29

**EPA Contact** If you have questions about this letter, please contact me at 703-305-5407 (by phone), 703-305-6596 (by fax), or [peacock.dan@epa.gov](mailto:peacock.dan@epa.gov) (by E-Mail).

Sincerely yours,



Dan Peacock, Biologist  
Insecticide-Rodenticide Branch  
Registration Division (7504C)

**Enclosures** 1. Stamped Label  
2. Minimum Type Sizes for Final Printed Labels

**Letter Filed** Disk 63,A:\Pymetrozine\100-912 Dec 27, 2001.wpd, December 27, 2001

4/29

Fulfill®

[Detachable Booklet]

Insecticide

For control of certain aphids in cotton, hops, pecans, potatoes (and other tuberous and corn vegetables), tobacco, and vegetables

Active Ingredient:

Pymetrozine (CAS No. 123312-89-0) ..... 50.0%

Other Ingredients: ..... 50.0%

Total: ..... 100.0%

Fulfill is a water-dispersible granule containing 50% active ingredient by weight.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See additional precautionary statements and directions for use inside booklet.

~~REMOVED~~  
with COMMENTS  
in EPA Letter Dated:

EPA Reg. No. 100-912

DEC 27 2001

EPA Est. 67545-AZ-1

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

Product of Switzerland  
Formulated in the USA

100-912

SCP 912A-L4G (DRAFT)

1 pound, 11.5 ounces, (27.5 ounces)

Net Weight

5/29

<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 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>NOTE TO PHYSICIAN</b>	
If ingested, induce emesis or lavage stomach. Treat symptomatically.	
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	
<b>HOTLINE NUMBER</b>	
For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) Call 1-800-888-8372	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling.

**Personal Protective Equipment**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Waterproof gloves
- 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 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 immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**Environmental Hazards**

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 cleaning equipment or disposing of equipment wash water.

**Physical or Chemical Hazards**

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

---

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

---

**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 should 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. All such risks shall be assumed by Buyer and User, and 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. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **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 limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

8/29

## DIRECTIONS FOR USE

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

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 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:

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

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

---

### STORAGE AND DISPOSAL

---

#### Storage

Store in a cool, dry place.



9/29

### **Pesticide Disposal**

Do not contaminate water, food, or feed by storage or disposal. Pesticide wastes may be 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 instruction, 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 container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

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.

---

### **GENERAL INFORMATION**

---

Fulfill is an insecticide for the control of certain aphid species in cotton, hops, pecans, potatoes (and other tuberous and corn vegetables), tobacco, and vegetables.

Apply Fulfill to plant foliage when aphids first appear, before populations build to damaging levels.

Thorough spray coverage is essential for best performance. Apply Fulfill in sufficient water to ensure good coverage of all plant surfaces. The use of greater water volumes will generally result in better coverage, especially under adverse conditions (e.g., hot, dry) or where a dense plant canopy exists. See the **CROP USE DIRECTIONS** section of this label for specific recommendations on spray volumes for different crops.

The use of a penetrating type spray adjuvant, at the manufacturer's suggested rate, is recommended with all applications of Fulfill. The use of a surfactant typically improves coverage and results in optimum insect control, especially in hard-to-wet crops.

Fulfill exhibits excellent translaminar movement (movement across the leaf surface and into plant tissue) and is rainfast as soon as the spray solution has dried.

### **Mode of Action**

Fulfill works primarily by ingestion, but also has some contact activity. Affected aphids stop feeding shortly after exposure, but may remain on the plant foliage until they die, which is usually within 4-10 days. Fulfill has residual activity in the plant and will control aphids that move onto the plant after spraying.

### **Suitability for Integrated Pest Management Programs**

10/29

Fulfill is suitable for Integrated Pest Management (IPM) programs as it has a low toxicity to beneficial insects (including honeybees and bumblebees) and mites. It can be used in IPM programs using beneficial insects and during periods of pollination. However, do not apply Fulfill directly to bees that are actively foraging in the field.

**Phytotoxicity**

Fulfill has been tested for phytotoxicity at the label rates and has shown no effects on the crops listed on this label.

**Resistance Management**

Fulfill belongs to a class of chemicals not previously used as pesticides and is not known to be cross-resistant to other classes of insecticides. However, because of the inherent risks of resistance development to any product, it is strongly advised that Fulfill be used in a sound resistance management program that includes rotation with other products with different modes of action.

**Aphids Controlled<sup>1</sup>**

**Common Name**

**Scientific Name**

Bean aphid	<i>Aphis fabae</i>
Bird cherry-oat aphid	<i>Rhopalosiphum padi</i>
Blackmargined aphid	<i>Monellia caryella</i>
Black pecan aphid	<i>Melanocallis caryaefoliae</i>
Buckthorn aphid	<i>Aphis nasturtii</i>
Cabbage aphid	<i>Brevicoryne brassicae</i>
Corn leaf aphid	<i>Rhopalosiphum maidis</i>
English grain aphid	<i>Sitobion avenae</i>
Green peach aphid	<i>Myzus persicae</i>
Hop aphid	<i>Phorodon humuli</i>
Lettuce aphid	<i>Nasonovia ribis-nigri</i>
Melon/cotton aphid	<i>Aphis gossypii</i>
Pea aphid	<i>Acyrtosiphon pisum</i>
Potato aphid	<i>Macrosiphum euphorbiae</i>
Red lettuce aphid	<i>Uroleucon pseudambrosiae</i>
Tobacco aphid	<i>Myzus nicotianae</i>
Turnip aphid	<i>Lipaphis erysimi</i>
Yellow pecan aphid	<i>Monelliopsis pecanis</i>

<sup>1</sup>See individual crop sections for information on which aphid species most typically infest a particular crop.

## Rotational Restrictions

The rotational (plantback) restriction for Fulfill is 30 days for all crops.

---

## APPLICATION PROCEDURES

---

### Ground Spray Equipment

Use sufficient water to provide thorough, uniform coverage.

Use sprayer nozzles that provide accurate, uniform application and medium-sized droplets.

Calibrate sprayer from manufacturer's instructions or state's recommendations to ensure delivery of adequate spray volume per unit area.

Applications using sufficient water volume to provide thorough and uniform coverage generally provide the most effective aphid pest control. For ground applications, use the minimum spray volume indicated in the **CROP USE DIRECTIONS** section of this label. In situations where a dense canopy exists and/or aphid infestations are high, use greater water volumes.

### Aerial Application

Apply Fulfill in water, using the minimum spray volume indicated in the **CROP USE DIRECTIONS** section of this label. Increase spray volume under adverse conditions (i.e., high temperature, low relative humidity, dense plant canopy). Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift or inversion may occur. Do not apply directly to humans or animals.

### 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 or crops. Follow these recommendations to avoid spray drift.

- Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph.
- Avoid spraying when conditions are favorable for drift (high temperatures, low relative humidity, drought). Do not apply during temperature inversions. If an inversion condition is suspected, consult with local weather services before making an application.
- 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.

12/29

- 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.

## Chemigation

**Application Through Irrigation Systems – Potatoes only (Not for use in CA):** Fulfill 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 Fulfill through any other type of irrigation system. Lack of effectiveness or illegal pesticide residues can result from nonuniform 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 FULFILL 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. Fulfill 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 that 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 for treatment.

### **Calibration and Application Instructions**

Fulfill 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 80-95% 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 Fulfill through center pivot systems because of nonuniform 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.

14/29

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 Fulfill, and any tank mix partners, required to treat the area covered by the irrigation system.
5. Add the required amount of Fulfill, any tank mix partners, and sufficient water to meet the injection time requirements to the solution tank. (See the **MIXING PROCEDURES** section of this label.)
6. Make sure the system is fully charged with water before starting injection of the Fulfill 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 Fulfill 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 Fulfill 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 Fulfill required to treat the area covered by the irrigation system.
4. Add the required amount of Fulfill, and any other tank mix partners, into the same quantity of water used to calibrate the injection period. (See the **MIXING PROCEDURES** section of this label.)
5. Operate the system at the same pressure and time interval established during the calibration.

15/29

6. Inject specified amount of Fulfill 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 Fulfill 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.

---

## MIXING PROCEDURES

---

Prepare no more spray mixture than is needed for the immediate application. Thoroughly clean spray equipment before using this product. Agitate the spray solution before and during application. 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.

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

**Note:** Do not use liquid fertilizer as a carrier for Fulfill.

**Fulfill + 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. In general, tank mix partners should be added in this order: products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables) such as Fulfill, liquid flowables, liquids and emulsifiable concentrates. 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 Fulfill in tank mixtures, all products in water-soluble packaging should be added to the tank before any other tank mix partner, including Fulfill. 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 Fulfill 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. No label dosage rate should be exceeded, and the most restrictive label precautions and limitations should be followed. This product should not be mixed 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 registered.

**Compatibility:** Fulfill is compatible with most insecticide, fungicide, fertilizers, and micronutrient products. However, the physical compatibility of Fulfill with tank mix

11/29

partners should be tested before use. To determine the physical compatibility of Fulfill with other products, use a jar test, as described below.

Using a 1½ 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 acceptable, use the same procedure for adding required ingredients to the spray tank. If the combination proves not to be physically compatible, do not use these products in a tank mix.

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

---

### **CROP USE DIRECTIONS**

---

According to the following table, Fulfill may be used for the sites and pests at the indicated rates and limitations.



17/29

**Row Crops**

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
Cotton	Cotton aphid	<b>Foliar application:</b>  2.75 oz./A	Apply when aphids first appear, before populations build to damaging levels.  Two applications may be needed to control persistent aphid populations.
	Whiteflies	<b>Foliar application:</b>  2.75 oz./A	Provides suppression of whiteflies. <sup>2</sup>  Apply when adult whiteflies first appear, before populations build to damaging levels.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 2 gals./A when applied by air and a minimum of 10 gals./A when applied by ground. The addition of a penetrating type spray adjuvant, at the manufacturer's suggested rate, is recommended to provide optimum coverage and penetration.

Do not apply more than 2.75 oz./A per application. Do not exceed a total of 5.5 oz./A per crop per season.

Allow a minimum of 7 days between applications. Allow a minimum of 21 days (PHI) between the last application and harvest.

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.

<sup>2</sup>Fulfill aids in the suppression of whitefly (silverleaf, sweet potato, and banded winged) populations. Suppression means either erratic control ranging from good to poor, or consistent control at a level below that which is generally considered acceptable for commercial control.

18/29

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
<b>Potatoes (and other Tuberous and Corm Vegetables)</b>  Potato Sweet potato True yam Bean yam Jerusalem artichoke Chinese artichoke Edible canna Chayote root Arracacha Arrowroot Bitter cassava Sweet cassava Chufa Dasheen Ginger Leren Tanier Turmeric	Green peach Aphid           Potato aphid           Melon aphid           Buckthorn aphid	<b>Foliar application:</b>  2.75 oz./A	Apply when aphids first appear, before populations build to damaging levels.           Two applications may be needed to control persistent aphid populations.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 5 gals./A when applied by air and a minimum of 10 gals./A when applied by ground. The addition of a penetrating type spray adjuvant at the manufacturer's suggested rate, is recommended to provide optimum coverage and penetration.

Do not apply more than 2.75 oz./A per application. Do not exceed a total of 5.5 oz./A per crop per season.

Allow a minimum of 7 days between applications. Allow a minimum of 14 days (PHI) between the last application and harvest.

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.

19/29

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
Tobacco	Green peach aphid  Tobacco aphid	Foliar application:  2.75 oz./A	Apply when aphids first appear, before populations build to damaging levels.  Two applications may be needed to control persistent aphid populations.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 20 gals./A when applied by ground. Do not apply by air. The addition of a penetrating type spray adjuvant, at the manufacturer's suggested rate, is recommended to provide optimum coverage and penetration.

Do not apply more than 2.75 oz./A per application. Do not exceed a total of 5.5 oz./A per crop per season.

Allow a minimum of 7 days between applications. Allow a minimum of 14 days (PHI) between the last application and harvest.

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.

20/29

**Vegetable Crops**

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
<b>Cole Crops</b>  Cabbage Chinese cabbage (bok choy, napa) Chinese mustard cabbage Broccoli Chinese broccoli Broccoli raab Cauliflower Brussels sprouts Cavalo broccolo Kohlrabi Collards Kale Mustard greens Mizuna Mustard spinach Rape greens Turnip greens	Green peach aphid  Cabbage aphid  Turnip aphid	<b>Foliar application:</b>  2.75 oz./A	Apply when aphids first appear, before populations build to damaging levels.  Two applications may be needed to control persistent aphid populations.
	Whiteflies	<b>Foliar application:</b>  2.75 oz./A	Provides suppression of whiteflies. <sup>2</sup>  Apply when adult whiteflies first appear, before populations build to damaging levels.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 5 gals./A when applied by air and a minimum of 10 gals./A when applied by ground. The addition of a penetrating type spray adjuvant, at the manufacturer's suggested rate, is recommended to provide optimum coverage and penetration.

Do not apply more than 2.75 oz./A per application. Do not exceed a total of 5.5 oz./A per crop per season.

Allow a minimum of 7 days between applications. Allow a minimum of 7 days (PHI) between the last application and harvest.

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.

<sup>2</sup>Fulfill aids in the suppression of whitefly (silverleaf, sweet potato, and banded winged) populations. Suppression means either erratic control ranging from good to poor, or consistent control at a level below that which is generally considered acceptable for commercial control.

21/29

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
<b>Cucurbit Vegetables</b>  Cucumber Squash: summer, Winter Muskmelon Citron melon Pumpkin Chayote Chinese waxgourd Gherkin Edible gourd Watermelon <i>Momordica</i> spp.	Melon aphid  Green peach aphid	<b>Foliar application:</b>  2.75 oz./A	Apply when aphids first appear, before populations build to damaging levels.  Two applications may be needed to control persistent aphid populations.
	Whiteflies	<b>Foliar application:</b>  2.75 oz./A	Provides suppression of whiteflies. <sup>2</sup>  Apply when adult whiteflies first appear, before populations build to damaging levels.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 5 gals./A when applied by air and 10 gals./A when applied by ground. The addition of a penetrating type spray adjuvant, at the manufacturer's suggested rate, is recommended to provide optimum coverage and penetration.

Do not apply more than 2.75 oz./A per application. Do not exceed a total of 5.5 oz./A per crop per season.

Allow a minimum of 7 days between applications. Applications can be made up to and including the day of harvest (Ø day PHI).

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.

<sup>2</sup>Fulfill aids in the suppression of whitefly (silverleaf, sweet potato, and banded winged) populations. Suppression means either erratic control ranging from good to poor, or consistent control at a level below that which is generally considered acceptable for commercial control.

22/29

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
<b>Fruiting Vegetables</b>  Tomato Peppers: bell, chili, cooking, pimento, and sweet Eggplant Ground cherry Pepino Tomatillo	Green peach aphid  Potato aphid	<b>Foliar application:</b>  2.75 oz./A	Apply when aphids first appear, before populations build to damaging levels.  Two applications may be needed to control persistent aphid populations.
	Whiteflies	<b>Foliar application:</b>  2.75 oz./A	Provides suppression of whiteflies. <sup>2</sup>  Apply when adult whiteflies first appear, before populations build to damaging levels.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 5 gals./A when applied by air and 10 gals./A when applied by ground. The addition of a penetrating type spray adjuvant, at the manufacturer's suggested rate, is recommended to provide optimum coverage and penetration.

Do not apply more than 2.75 oz./A per application. Do not exceed a total of 5.5 oz./A per crop per season.

Allow a minimum of 7 days between applications. Applications can be made up to and including the day of harvest (Ø day PHI).

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.

<sup>2</sup>Fulfill aids in the suppression of whitefly (silverleaf, sweet potato, and banded winged) populations. Suppression means either erratic control ranging from good to poor, or consistent control at a level below that which is generally considered acceptable for commercial control.

23/29

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
<b>Leafy Vegetables</b>  Head lettuce Leaf lettuce Spinach Celery Chinese celery Celtuce Amaranth Arugula Chervil Cardoon Edible-leaved chrysanthemum Garland chrysanthemum Corn salad Garden/Upland cress Dandelion Dock Endive Fennel, Florence Orach Parsley Garden/Winter purslane Radicchio Rhubarb Swiss chard	Green peach aphid  Potato aphid  Red lettuce aphid  Bean aphid  Lettuce aphid	<b>Foliar application:</b>  2.75 oz./A	Apply when aphids first appear, before populations build to damaging levels.  Two applications may be needed to control persistent aphid populations.
	Whiteflies	<b>Foliar application:</b>  2.75 oz./A	Provides suppression of whiteflies. <sup>2</sup>  Apply when adult whiteflies first appear, before populations build to damaging levels.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 5 gals./A when applied by air and 10 gals./A when applied by ground. The addition of a penetrating type spray adjuvant, at the manufacturer's suggested rate, is recommended to provide optimum coverage and penetration.

Do not apply more than 2.75 oz./A per application. Do not exceed a total of 5.5 oz./A per crop per season.

Allow a minimum of 7 days between applications. Allow a minimum of 7 days (PHI) between the last application and harvest.

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.

<sup>2</sup>Fulfill aids in the suppression of whitefly (silverleaf, sweet potato, and banded winged) populations. Suppression means either erratic control ranging from good to poor, or consistent control at a level below that which is generally considered acceptable for commercial control.

24/29

**Hops**

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
Hops	Hot aphid	4.0-6.0 oz./A	Apply when aphids first appear, before populations build to damaging levels.

Do not apply at rates lower than those recommended on this label. Two applications may be needed to control heavy aphid infestations.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 120 gals./A. Do not apply by air. The addition of a nonionic surfactant or organosilicone-based surfactant, at the manufacturer's suggested rate, is recommended to provide optimum coverage and insect control.

Do not apply more than 6.0 oz./A per application. Do not make more than three applications per crop per season; do not exceed a total of 18.0 oz./A per crop per season.

Allow a minimum of 14 days between applications. Allow a minimum of 14 (PHI) days between the last application and harvest.

**Note:** Fulfill causes cessation of insect feeding shortly after application. However, aphids may remain on the plant for 2-4 days before they die.

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.

**Tree Crops**

Crop	Pest <sup>1</sup>	Rate Per Acre Per Application	Remarks
Pecan	Blackmargined aphid	Foliar application: 4.0 oz./A	Apply when aphids first appear, before populations build to damaging levels.  Apply higher rates for heavy infestations. Two applications may be needed to control persistent aphid populations.
	Yellow pecan aphid		
	Black pecan aphid		

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 50 gals./A when applied by ground and 20 gals./A when applied by air. The addition of a penetrating type spray adjuvant, at the manufacturer's suggested rate, is recommended to provide optimum coverage and penetration.

Do not apply more than 4.0 oz./A per application. Do not exceed a total of 8.0 oz./A per crop per season.

Allow a minimum of 7 days between applications. Allow a minimum of 14 days (PHI) between the last application and harvest.

<sup>1</sup>Aphid pests listed in the individual crop sections are the species that most commonly infest that crop. However, Fulfill will control all aphid species listed in the **General Information** section of this label.



Fulfill® and the Syngenta logo are trademarks of a Syngenta Group Company  
U.S. Patent No. 4,931,439

©2001 Syngenta

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

Product of Switzerland  
Formulated in the USA

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)

SCP 912A-L4 (DRAFT)

26/29

Non-detachable Container Label  
(Base Label)

ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

DEC 27 2001

Fulfill®

Insecticide

For control of certain aphids in cotton, hops, pecans, potatoes (and other tuberous and corn vegetables), tobacco, and vegetables

Under the Fungicide, Insecticide, and Plant Growth Regulator Act as amended, registered under EPA Reg. No. 100-912

Active Ingredient:

Pymetrozine (CAS No. 123312-89-0) ..... 50.0%

Other Ingredients: ..... 50.0%

Total: ..... 100.0%

Fulfill is a water-dispersible granule containing 50% active ingredient by weight.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See directions for use in attached 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. 100-912

EPA Est. 67545-AZ-1

SCP 912A-L4 (DRAFT)

1 pound, 11.5 ounces (27.5 ounces)  
Net Weight

27/29

<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 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>NOTE TO PHYSICIAN</b>	
If ingested, induce emesis or lavage stomach. Treat symptomatically.	
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	
<b>HOTLINE NUMBER</b>	
For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) Call 1-800-888-8372	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling.

**Environmental Hazards**

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 cleaning equipment or disposing of equipment wash water.

28/29

### **Container Disposal**

Triple rinse container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

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.

Fulfill® and the Syngenta logo are trademarks of a Syngenta Group Company

©2001 Syngenta

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)

SCP 912A-L4 (DRAFT)

Z:LABELF-W/FUL912A-L4G(DRAFT) – ccg – 10/30/01

**Chron**

9/19/00 - add chemigation

3/8/01 - addition of cotton, hops, leafy vegetables, head and stem brassica, leafy brassica greens

3/12/01 - change to Syngenta elements

9/4/01 – removed hops and revised First Aid

10/30/01 – added hops back in; added pecans; changed 14 day PHI of cucurbit and fruiting vegetables to Ø day PHI; changed Ø day PHI of leafy vegetables and cole crops to 7 day PHI; revised container disposal language.