



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

March 2, 2022

Sue-Chi Shen
Sr. Regulatory Project Manager
Valent U.S.A. LLC
1600 Riviera Ave., Suite 200
Walnut Creek, CA 94596-8025

Subject: Registration Review Label Mitigation for Pyriproxyfen
Product Name: PYRIPROXYFEN 0.86 EC VPP INSECT GROWTH
REGULATOR
EPA Registration Number: 59639-163
Application Date: April 18, 2020
Decision Number: 561884

Dear Sue-Chi Shen:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Pyriproxyfen Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently

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approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions about this letter, please contact Marisa Wright by phone at 202-566-2335, or via email at wright.marisa@epa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Linda Arrington".

Linda Arrington, Branch Chief
Risk Management and Implementation Branch 4
Pesticide Re-Evaluation Division
Office of Pesticide Programs

Enclosure



PYRIPROXYFEN | GROUP 7C | INSECTICIDE

PYRIPROXYFEN 0.86 EC VPP INSECT GROWTH REGULATOR

Active Ingredient	By Wt
*Pyriproxyfen	11.23%
Other Ingredients	88.77%
Total	100.00%

*2-[1-methyl-2-(4-phenoxyphenoxy)ethoxy]pyridine

Pyriproxyfen 0.86 EC VPP Insect Growth Regulator contains 0.86 pound ai per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No. 59639-163
NET CONTENTS _____

ACCEPTED
03/02/2022
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 59639-163

FIRST AID

If on skin or clothing:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

If swallowed:

- Call poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by the poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

If inhaled:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
- Call a poison control center or doctor for treatment advice.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **800-892-0099** for emergency medical treatment information.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

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

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear: long-sleeved shirt and long pants, socks, shoes and chemical-resistant gloves, such as barrier laminate or butyl rubber \geq 14 mils.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

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

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
- Remove and wash contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS:

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water by disposing of equipment washwaters or rinsate. Avoid direct application and/or spray drift to beehives.

DIRECTIONS FOR USE

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

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 (WPS), 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 (REI). The requirements in this box only apply to uses of this product that are covered by the WPS.

Do not enter or allow worker entry into treated areas during the REI of 12 hours.

PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, chemical-resistant gloves, such as Barrier Laminate or Butyl Rubber \geq 14 mils, shoes plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

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

Keep unprotected persons out of treated areas until sprays have dried.

**DISCLAIMER, RISKS OF USING THIS PRODUCT,
LIMITED WARRANTY AND LIMITATION OF LIABILITY**

IMPORTANT: Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW. AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

LIMITED WARRANTY

Valent warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. To the extent consistent with applicable law AND AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

LIMITATION OF LIABILITY

To the fullest extent allowed by law, Valent or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR 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 THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THE PRODUCT.

PROMPT NOTICE OF CLAIM

To the extent consistent with applicable law allowing such requirements, Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is latter, so that an immediate inspection of the affected property and growing crops can be made.

To the extent consistent with applicable law, if Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

NO AMENDMENTS

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing **Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability**, which may not be modified by any oral or written agreement.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent consistent with applicable law.

Read and follow the entire label of each product to be used in the tank mix with this product.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Pyriproxyfen 0.86 EC VPP Insect Growth Regulator contains a Group 7C insecticide. Any insect population may contain individuals naturally resistant to Pyriproxyfen 0.86 EC VPP Insect Growth Regulator and other Group 7C insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance, take the following steps:

- Rotate the use of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator or other Group 7C insecticides within a growing season, or among growing seasons, with different groups that control the same pests.
- Use tank mixtures with insecticides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of the mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
 - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
 - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
 - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest(s).
 - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
 - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit only for the period where both insecticides are active.
- Adopt an integrated pest management program for insecticide use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which considers cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact Valent U.S.A. LLC at 800-6-VALENT (682-5368).

CHEMIGATION

Refer to supplemental labeling entitled, "Application of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator by Chemigation", for chemigation use directions. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

California: Do not apply this product through any type of irrigation system.

PRODUCT INFORMATION

For control of insects including whiteflies, scales, shore flies and fungus gnats in indoor (greenhouse, lath and shadehouse and interiorscapes) and outdoor ornamentals, including flowering and foliage crops, ground covers, shrubs and ornamental trees, non-bearing fruit and nut trees and indoor grown fruiting vegetables.

Pyriproxyfen 0.86 EC VPP Insect Growth Regulator affects all pest insect life stages, including eggs, nymphs/larvae, pupae and adults. Pyriproxyfen 0.86 EC VPP Insect Growth Regulator does not control adults, but greatly reduces their production of viable eggs due to its strong transovarial activity. In whitefly, transovarial activity begins within one day after adults contact or ingest Pyriproxyfen 0.86 EC VPP Insect Growth Regulator residues. Pyriproxyfen 0.86 EC VPP Insect Growth Regulator is also ovicidal and inhibits metamorphosis of nymphs, larvae and pupae into adults. Since Pyriproxyfen 0.86 EC VPP is an Insect Growth Regulator (IGR), activity depends on the insect's development. Therefore, evidence of activity may be slower than with typical contact insecticides, especially when large numbers of late instars are present at time of application.

Pyriproxyfen 0.86 EC VPP Insect Growth Regulator also has strong translaminar activity on a variety of ornamental plants, including poinsettia, hibiscus, gerbera daisy and chrysanthemums. Pyriproxyfen 0.86 EC VPP Insect Growth Regulator residues applied to the upper leaf surface will rapidly penetrate the leaf cuticle, and can subsequently be ingested by immature and adult insects feeding on the lower leaf surface (e.g. whitefly). Therefore, even in cases where it is difficult to achieve thorough under leaf spray coverage, Pyriproxyfen 0.86 EC VPP Insect Growth Regulator can still provide highly effective control.

Pyriproxyfen 0.86 EC VPP Insect Growth Regulator is intended for use in Integrated Pest Management (IPM) or Insect Resistance Management (IRM) programs. Pyriproxyfen 0.86 EC VPP Insect Growth Regulator will not control adult insects, and it is recommended to be used in combination and/or rotation with other IPM or IRM materials. Contact your local state extension service for details.

PLANT TOLERANCE

IMPORTANT: The large number of existing ornamental varieties and cultivars coupled with the constant introduction of new varieties makes it impossible to field test Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in every locale where sold or in all of the combinations created by these differences. These differences include the soil or media type, pH, moisture or fertility, environmental conditions such as temperature, lighting or degree-days and horticultural practice and the manner of use and application of this product.

To ensure that Pyriproxyfen 0.86 EC VPP Insect Growth Regulator is compatible with the variety or cultivar under your specific conditions, test the product on a limited scale and observe for phytotoxicity for two weeks before making large scale applications. Phytotoxicity has been observed on the following plants: Salvia (*Salvia* spp.), Ghost Plant (*Graptopetalum paraguayense*), Boston Fern (*Nephrolepis exaltata*), Schefflera (*Schefflera* spp.), Gardenia (*Gardenia* spp.) and Coral Bells (*Heuchera sanguinea*). It is therefore recommended that Pyriproxyfen 0.86 EC VPP Insect Growth Regulator not be used on these plants. Do not apply to Poinsettia after bract formation.

MIXING INSTRUCTIONS

Prepare no more spray mixture than is necessary for the immediate operation. Thoroughly clean spray equipment before using this product. Agitate thoroughly before and during application. Flush spray tank thoroughly with clean water daily after use and dispose of pesticide rinsate by application to a previously treated area. Add 1/2 to 2/3 of the required amount of water to the spray or mix tank. With the agitator running, add the required amount of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator. Continue agitation while adding the remainder of the water. Begin application of the spray solution after Pyriproxyfen 0.86 EC VPP Insect Growth Regulator has been added and completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

CONVERSION CHART

Gallons of Mixture*									
Rate/100 Gals		Rate/50 Gals		Rate/25 Gals		Rate/10 Gals		Rate/5 Gals	
oz	ml	oz	ml	oz	ml	oz	ml	oz	ml
2	59	1	30	0.5	15	0.2	5.9	0.1	3.0
3	89	1.5	44	0.75	22	0.3	8.9	0.15	4.4
4	118	2	59	1.0	30	0.4	11.8	0.2	5.9
5	148	2.5	74	1.25	37	0.5	14.8	0.25	7.4
6	177	3	89	1.5	44	0.6	17.7	0.3	8.9
8	237	4	118	2.0	59	0.8	23.7	0.4	11.8
10	296	5	148	2.5	74	1.0	30.0	0.5	14.8
12	355	6	177	3.0	89	1.2	35.5	0.6	17.7

*Determine the rate per 100 gallons from Table 1. Follow the proper rate across the row to determine how much to add for mixtures less than 100 gals.

COMPATIBILITY

Pyriproxyfen 0.86 EC VPP Insect Growth Regulator is compatible with most commonly used insecticides, fungicides and spray adjuvants used in the production of ornamental plants. When using Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in tank mixes with other pesticides, observe all directions for use and precautions on the respective tank mix label. When making an application of a tank mix for the first time, it is recommended that a few plants be treated and observed for phytotoxicity for two to four weeks before making large scale applications.

LOW VOLUME SYSTEMS

Pyriproxyfen 0.86 EC VPP Insect Growth Regulator has been evaluated and shown to be effective for foliar applications when applied through Electrostatic Spraying Systems, PulsFOG® Systems or other low volume systems. To calculate the amount of product to be applied, use the appropriate amount of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator for the square footage to be treated with spray as listed. The amount of carrier (water) is dependent on the amount needed for adequate coverage. Do not use low volume systems to control soil-inhabiting insects such as fungus gnats and shore flies.

APPLICATION INSTRUCTIONS FOR USE IN IRRIGATION SYSTEMS

Important: First time users of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator through irrigation systems should make an application to a small area with only a few plants present to ensure that the irrigation system is delivering a uniform, even application across the application area.

Chemigation: Do not apply Pyriproxyfen 0.86 EC VPP Insect Growth Regulator through any type of irrigation system when applying for control of foliar insects. Pyriproxyfen 0.86 EC VPP Insect Growth Regulator may be applied through overhead irrigation at rates recommended in this label to provide proper coverage of all surfaces when treating for fungus gnats and shore flies. Overhead irrigation systems include overhead sprinklers such as impact or micro-sprinklers, mist-type irrigation such as fog systems and hand-held calibrated irrigation equipment such as a hand-held wand with injector. Do not apply this product through any other type of irrigation system. Plant injury or lack of effectiveness, or illegal pesticide residues in a crop, can result from non-uniform distribution of treated water. If you have questions about calibration, contact either State Extension Specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system, unless the pesticide label prescribed safety devices for public water systems are in place. 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 to make necessary adjustments should the need arise.

Operation Instructions:

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick closing check-valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment. Avoid spray overlap, as injury may result.
8. Prepare a minimum mixture of 1 gal of water with the desired rate of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator and inject this mixture into the system. Injecting a larger volume of a more dilute mixture will usually provide more accurate calibration of metering equipment. Maintain sufficient agitation to keep Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in suspension.
9. Meter into irrigation water during the beginning of the irrigation cycle. It is important to continue running the system after the Pyriproxyfen 0.86 EC VPP Insect Growth Regulator application is finished to remove all the product from the foliage and get it into the areas where the immature insect stages are located.

Systems Connected to Public Water Systems:

1. 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 of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water systems should be 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 the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
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, or in cases where there is no water pump, when the water pressure decreases to the point where the pesticide distribution is adversely affected.
6. 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.

SPRAY DRIFT MANAGEMENT

SPRAY DRIFT

Airblast Applications

- All sprays must be directed into the canopy.
- Nozzles directed out of the orchard must be turned off when treating the outer row, or when making turns between rows.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

Ground Boom Applications

- User must only apply with the nozzle height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use a fine or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

Boom-less Ground Applications

- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. **AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.**

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Boom-less Ground Applications

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

Handheld Technology Applications

- Take precautions to minimize spray drift.

Table 1. Directions for Use on Shrubs, Ornamentals, Flowering Plants, Foliage Plants, Ground Covers, Ornamental Trees, Non-Bearing Fruit, Nut Trees and Vines

PESTS	RATES	APPLICATION METHOD	SPECIAL INSTRUCTIONS
<p>Aphids (suppression) Western Flower Thrips (suppression) Whiteflies including: Ficus Whitefly Giant Whitefly Greenhouse Whitefly Rugose Spiraling Whitefly Silverleaf Whitefly Sweetpotato Whitefly</p>	<p>6 to 8 fl oz 100 gals</p>	<p><u>Foliar Spray</u> 100 gals of spray mix will treat 20,000 sq ft of area.</p>	<p>Apply the spray mixture uniformly to all plant surfaces and to the point of runoff.</p> <p>Make first application when adult insects begin to appear. If necessary, make a second application from 14 to 28 days after the first application. If an additional application is needed less than 14 days after the first treatment, use an IGR (Insect Growth Regulator) with another mode of action or another chemical class of insecticide. Use lower rate and longer interval for newly established infestations and when plants are not rapidly flushing new growth. Use higher rates and shorter interval for established infestations and/or when plants are rapidly flushing new growth. Apply no more than two times per cropping cycle or no more than two times per six months. If rapid control of adult insects is required, apply a labeled adulticide.</p>
<p>Mealybugs (suppression) Scale including: Black Scale California Red Scale Euonymus Scale False Oleander Scale Florida Wax Scale Pine Needle Scale San Jose Scale Snow Scale Spotted Tentiform Leafminer</p>	<p>8 to 12 fl oz/ 100 gals</p>	<p><u>Foliar Spray</u> 100 gals of spray mix will treat 20,000 sq ft of area.</p>	<p>Apply the spray mixture uniformly to all plant surfaces and to the point of runoff.</p> <p>Target crawler stage when treating infestations of scale.</p>

continued

NOTE: Since ornamental varieties are numerous, constantly changing, and may react differently to Pyriproxyfen 0.86 EC VPP Insect Growth Regulator and tank mixtures including Pyriproxyfen 0.86 EC VPP Insect Growth Regulator, test the product(s) on a small scale before making large scale applications. Phytotoxicity has been observed on the following plants: Salvia (*Salvia* spp.), Ghost Plant (*Graptopetalum paraguayense*), Boston Fern (*Nephrolepis exaltata*), Schefflera (*Schefflera* spp.), Gardenia (*Gardenia* spp.) and Coral Bells (*Heuchera sanguinea*). It is therefore recommended that Pyriproxyfen 0.86 EC VPP Insect Growth Regulator not be used on these plants. DO NOT APPLY TO POINSETTIA AFTER BRACT FORMATION.

Table 2. Directions for Use on Shrubs, Ornamentals, Flowering Plants, Foliage Plants, Ground Covers, Ornamental Trees, Non-Bearing Fruit, Nut Trees and Vines.

PESTS	RATES	APPLICATION METHOD	SPECIAL INSTRUCTIONS
Fungus Gnats Shore Flies	3 to 6 fl oz/ 100 gals	Sprenc 100 gals of spray mix will treat 5,000 sq ft of area	For the control of fungus gnats and shore flies apply to potting media as a heavy, coarse spray (sprenc) through conventional equipment to all insect infested surfaces or where insects may breed. Complete coverage of infested areas is essential for control. For optimal control, treat breeding areas under benches at the same time that the crop is treated. For best results apply when the soil is moist. <u>Broadcast Application to Soil Surface:</u> For bed, bench and container grown plants, apply Pyriproxyfen 0.86 EC VPP Insect Growth Regulator as a coarse spray or sprenc to the soil surface. Mix 3 to 6 fl oz of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in 100 gals of water and apply to the soil surface at a volume of 2 to 3 gals of final spray solution per 100 sq ft of area. If a second application of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator is needed, allow a minimum of 21 days between applications.

continued

Table 2. Directions for Use on Shrubs, Ornamentals, Flowering Plants, Foliage Plants, Ground Covers, Ornamental Trees, Non-Bearing Fruit, Nut Trees and Vines. continued

PESTS	RATES	APPLICATION METHOD	SPECIAL INSTRUCTIONS		
Fungus Gnats Shore Flies	2 fl oz/ 100 gals	<u>Drench</u> Saturate only the top 1" to 1.5" of soil	<p>Important: For drench applications to Poinsettia see special use instructions below.</p> <p>For the control of fungus gnats and shore flies apply to potting media as a drench application through conventional equipment. For optimal control, apply additional amounts of spray solution to breeding areas under benches at the same time that the crop is treated. For best results apply when the soil is moist.</p> <p><u>Drench Application to Soil Surface of Individual Containers:</u></p> <p>Mix 2 fl oz of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in 100 gals of water and evenly apply to surface of potting media to ensure uniform treatment. Apply 3 fl oz of finished solution per 6 inch pot. Adjust volume accordingly for smaller or larger pots (see drench mixing chart below). Do not saturate potting media with drench solution, only the top 1" to 1.5" of soil needs to be drenched in order to achieve effective control. Do not drench plants more than one time per crop cycle.</p>		
			<p>Pot Diameter (inches)</p>	<p>Drench Volume (fl oz/pot)</p>	<p>Rate/100 Gals (fl oz)</p>
			4	1	2
			5	2	2
			6	3	2
			8	5	2
			10	7	2
			12	10	2

continued

Table 2. Directions for Use on Shrubs, Ornamentals, Flowering Plants, Foliage Plants, Ground Covers, Ornamental Trees, Non-Bearing Fruit, Nut Trees and Vines. continued

Note: Since ornamental varieties are numerous, constantly changing, and may react differently to Pyriproxyfen 0.86 EC VPP Insect Growth Regulator and tank mixtures including Pyriproxyfen 0.86 EC VPP Insect Growth Regulator, test the product(s) on a small scale before making large scale applications. Phytotoxicity has been observed on the following plants: *Salvia* (*Salvia spp.*), Ghost Plant (*Graptopetalum paraguayense*), Boston Fern (*Nephrolepis exaltata*), Schefflera (*Schefflera spp.*), Gardenia (*Gardenia spp.*), and Coral Bells (*Heuchera sanguinea*). It is therefore recommended that Pyriproxyfen 0.86 EC VPP Insect Growth Regulator not be used on these plants.

Drench Application to Individual Pots of Poinsettia: In a few instances, malformation of roots and newly expanded leaves (i.e. cupping) has been observed on certain Poinsettia varieties (i.e. Freedom Bright, Freedom Bright Red, Winter Rose and Jingle Bells) following drench application of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator. Leaf malformation was more commonly observed on plants exposed to high air temperatures and on plants whose soil media was allowed to dry out following application, such as those along walkways or near doorways. Malformation of affected leaves was permanent, but new growth was unaffected after plants were hydrated. Malformed leaves were generally not evident at time of shipment. To minimize the risk of leaf malformation when drenching Poinsettia with Pyriproxyfen 0.86 EC VPP Insect Growth Regulator:

- Do not saturate the potting media with Pyriproxyfen 0.86 EC VPP Insect Growth Regulator drench solution. Apply only enough solution to saturate the top 1 to 1.5 inches of media (ex. No more than 3 oz solution per 6" pot). Do not mix more than 2 oz of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator per 100 gal of water.
- Ensure that soil media remains uniformly moist and avoid exposing plants to high temperatures during and following drench application of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator. If leaf malformation is noted, thoroughly water affected plants and, if necessary, move these plants to an area of the greenhouse with higher humidity.
- Do not drench individual Poinsettia with Pyriproxyfen 0.86 EC VPP Insect Growth Regulator more than one time per crop cycle.
- DO NOT APPLY TO POINSETTIA AFTER BRACT FORMATION.

Table 3. Directions for Use on Indoor Grown Fruiting Vegetables.

PESTS	RATES	APPLICATION METHOD	SPECIAL INSTRUCTIONS
Aphids (suppression) Western Flower Thrips (suppression) Whiteflies including: Greenhouse Whitefly Silverleaf Whitefly Sweetpotato Whitefly	6 fl oz/ 100 gals	<u>Foliar Spray</u> 100 gals of spray mix will treat 20,000 sq ft of area.	Apply the spray mixture uniformly to all plant surfaces and to the point of runoff. Make first application when adult insects begin to appear. If necessary, make a second application from 14 to 28 days after the first application. If an additional application is needed less than 14 days after the first treatment, use an IGR with another mode of action or another chemical class of insecticide. Use lower rate and longer interval for newly established infestations and when plants are not rapidly flushing new growth. Use higher rates and shorter interval for established infestations and/or when plants are rapidly flushing new growth. Apply no more than two times per cropping cycle or no more than two times per six months. If rapid control of adult insects is required, apply a labeled adulticide.

<p>Fungus Gnats Shore Flies</p>	<p>3 to 6 fl oz/ 100 gals</p>	<p><u>Sprenc</u> 100 gals of spray mix will treat 5,000 sq ft of area</p>	<p>For the control of fungus gnats and shore flies apply to potting media as a heavy, coarse spray (sprenc) through conventional equipment to all insect infested surfaces or where insects may breed. Complete coverage of infested areas is essential for control. For optimal control, treat breeding areas under benches at the same time that the crop is treated. The soil surface should be moist at the time of application.</p> <p><u>Broadcast Application to Soil Surface:</u> For bed, bench and container grown plants, apply Pyriproxyfen 0.86 EC VPP Insect Growth Regulator as a coarse spray or sprenc to the soil surface. Mix 3 to 6 fl oz of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in 100 gals of water and apply to the soil surface at a volume of 2 to 3 gals of final spray solution per 100 sq ft of area. If a second application of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator is needed, allow a minimum of 21 days between applications. Apply no more than two times per cropping cycle or no more than two times per six months.</p>
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continued

Table 3. Directions for Use on Indoor Grown Fruiting Vegetables. continued

PESTS	RATES	APPLICATION METHOD	SPECIAL INSTRUCTIONS				
Fungus Gnats Shore Flies	2 fl oz/ 100 gals	<u>Drench</u> Saturate only the top 1" to 1.5" of soil	For the control of fungus gnats and shore flies apply to potting media as a drench application through conventional equipment. For optimal control, apply additional amounts of spray solution to breeding areas under benches at the same time that the crop is treated. The soil surface should be moist at the time of application.				
			<u>Drench Application to Soil Surface of Individual Containers:</u>				
			Mix 2 fl oz of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in 100 gals of water and evenly apply to surface of potting media to ensure uniform treatment. Apply 3 fl oz of finished solution per 6 inch pot. Adjust volume accordingly for smaller or larger pots (see drench mixing chart below). Do not saturate potting media with drench solution , only the top 1" to 1.5" of soil needs to be drenched in order to achieve effective control. Do not drench plants more than one time per crop cycle.				
			Pot Diameter (inches)	Drench Volume (fl oz/pot)	Rate/100 Gals (fl oz)		
			4	1	2		
			5	2	2		
			6	3	2		
			8	5	2		
10	7	2					
12	10	2					

NOTE: Since fruiting vegetable varieties are numerous, constantly changing and may react differently to Pyriproxyfen 0.86 EC VPP Insect Growth Regulator and tank mixtures including Pyriproxyfen 0.86 EC VPP Insect Growth Regulator, test the product(s) on a small scale before making large-scale applications.

- Do not apply to tomato varieties less than 1 inch in diameter.
- Do not apply to non-bell peppers.
- Do not apply within one (1) day of harvest.
- Do not make more than two (2) Pyriproxyfen 0.86 EC VPP Insect Growth Regulator applications per season.
- Do not exceed 13 fl oz Pyriproxyfen 0.86 EC VPP Insect Growth Regulator per acre per application.
- Regardless of formulation, do not apply more than 0.176 lb ai of pyriproxyfen per acre per season.

Table 4. Directions for Use on Indoor Grown Herbs (Crop Group 19A)

PESTS	RATES	APPLICATION METHOD	SPECIAL INSTRUCTIONS
<p>Aphids (suppression) Western Flower Thrips (suppression) Whiteflies including: Greenhouse Whitefly Silverleaf Whitefly Sweetpotato Whitefly</p>	<p>6 fl oz/ 100 gals</p>	<p><u>Foliar Spray</u> 100 gals of spray mix will treat 20,000 sq ft of area</p>	<p>Apply the spray mixture uniformly to all plant surfaces and to the point of runoff.</p> <p>Make first application when adult insects begin to appear. If necessary, make a second application from 14 to 28 days after the first application. If an additional application is needed less than 14 days after the first treatment, use an IGR with another mode of action or another chemical class of insecticide. Use lower rate and longer interval for newly established infestations and when plants are not rapidly flushing new growth. Use higher rates and shorter interval for established infestations and/or when plants are rapidly flushing new growth. Apply no more than two times per cropping cycle or no more than two times per six months. If rapid control of adult insects is required, apply a labeled adulticide.</p>
<p>Fungus Gnats Shore Flies</p>	<p>3 to 6 fl oz/ 100 gals</p>	<p><u>Sprenc</u> 100 gals of spray mix will treat 5,000 sq ft of area</p>	<p>For the control of fungus gnats and shore flies apply to potting media as a heavy, coarse spray (sprenc) through conventional equipment to all insect infested surfaces or where insects may breed. Complete coverage of infested areas is essential for control. For optimal control, treat breeding areas under benches at the same time that the crop is treated. For best results apply when the soil is moist.</p> <p><u>Broadcast Application to Soil Surface:</u> For bed, bench and container grown plants, apply Pyriproxyfen 0.86 EC VPP Insect Growth Regulator as a coarse spray or sprenc to the soil surface. Mix 3 to 6 fl oz of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in 100 gals of water and apply to the soil surface at a volume of 2 to 3 gals of final spray solution per 100 sq ft of area. If a second application of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator is needed, allow a minimum of 21 days between applications. Apply no more than two times per cropping cycle or no more than two times per six months.</p>

continued

Table 4. Directions for Use on Indoor Grown Herbs (Crop Group 19A) continued

PESTS	RATES	APPLICATION METHOD	SPECIAL INSTRUCTIONS			
Fungus Gnats Shore Flies	2 fl oz/ 100 gals	<p><u>Drench</u> Saturate only the top 1" to 1.5" of soil</p>	<p>For the control of fungus gnats and shore flies apply to potting media as a drench application through conventional equipment. For optimal control, apply additional amounts of spray solution to breeding areas under benches at the same time that the crop is treated. For best results apply when the soil is moist.</p> <p><u>Drench Application to Soil Surface of Individual Containers:</u> Mix 2 fl oz of Pyriproxyfen 0.86 EC VPP Insect Growth Regulator in 100 gals of water and evenly apply to surface of potting media to ensure uniform treatment. Apply 3 fl oz of finished solution per 6 inch pot. Adjust volume accordingly for smaller or larger pots (see drench mixing chart below). Do not saturate potting media with drench solution, only the top 1" to 1.5" of soil needs to be drenched in order to achieve effective control. Do not drench plants more than one time per crop cycle.</p>			
			Pot Diameter (inches)	Drench Volume (fl oz/pot)	Rate/100 Gals (fl oz)	
			4	1	2	
			5	2	2	
			6	3	2	
			8	5	2	
			10	7	2	
			12	10	2	
<p>NOTE: Since herb varieties are numerous, constantly changing and may react differently to Pyriproxyfen 0.86 EC VPP Insect Growth Regulator and tank mixtures including Pyriproxyfen 0.86 EC VPP Insect Growth Regulator, test the product(s) on a small scale before making large-scale applications.</p> <ul style="list-style-type: none"> • Do not apply within one (1) day of harvest. • Do not make more than two (2) Pyriproxyfen 0.86 EC VPP Insect Growth Regulator applications per season. • Do not exceed 13 fl oz Pyriproxyfen 0.86 EC VPP Insect Growth Regulator per acre per application. • Regardless of formulation, do not apply more than 0.176 lb ai of pyriproxyfen per acre per season. 						

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE

Store in a cool dry place.

Keep pesticide in original container.

Keep container closed when not in use.

Do not put concentrate or dilute into food or drink containers.

Not for use or storage in or around the home.

For help with any spill, leak, fire or exposure involving this material, call day or night
800-892-0099.

PESTICIDE DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING

Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available.

Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

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Manufactured for:

Valent U.S.A. LLC

P.O. Box 5075

San Ramon CA 94583

Made in U.S.A.

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