



OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

WASHINGTON, D.C. 20460

February 3, 2026

Jeanette Covert
Regional Regulatory Manager
UPL NA Inc.
630 Freedom Business Center, Ste. 402
King of Prussia, PA 19406

Subject: Label Amendment - Registration Review Mitigation for Bifenthrin
Product Name: UP-STAR SC LAWN AND NURSERY INSECTICIDE/MITICIDE
EPA Registration Number: 70506-23
Case Number: 479738
Application Dates: 3/12/2021

Dear Jeanette Covert:

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 Bifenthrin 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.

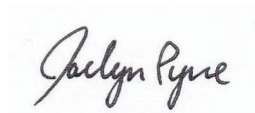
Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide, Fungicide, and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded 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 Assurance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling and must be used at your next label printing. 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 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 Carolyn Smith by phone at 202-566-2273, or via email at smith.carolyn@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Jaclyn Pyne". The signature is written in a cursive, flowing style.

Jaclyn Pyne, Team Leader
Risk Management and Implementation Branch 3
Pesticide Re-Evaluation Division
Office of Pesticide Programs

ENCLOSURE: Stamped label

RESTRICTED USE PESTICIDE
Toxic to fish and aquatic organisms.
For retail sale to and use only by certified applicators, or persons under their direct supervision and only for the uses covered by the certified applicator's certification.

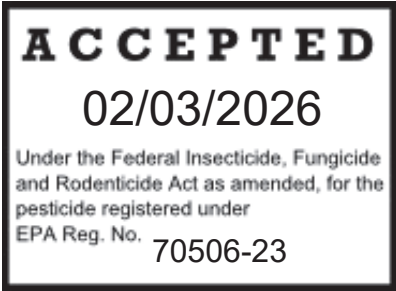
Bifenthrin | **GROUP** | **3A** | **INSECTICIDE**

UP-STAR SC LAWN AND NURSERY INSECTICIDE/MITICIDE

For Non-Food Use on Indoor and Outdoor Ornamentals, Greenhouses, Nurseries, Turf on Golf Courses, Sod Farms, and on ornamentals and lawns in landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, golf courses, sod farms and athletic fields. For outdoor use only.

DO NOT USE THIS PRODUCT ON GOLF COURSES OR SOD FARMS IN NASSAU COUNTY OR SUFFOLK COUNTY, NEW YORK.

Active Ingredient: **By Wt.**
Bifenthrin* 7.9%
Other Ingredients: 92.1%
TOTAL 100.0%
UP-Star SC Lawn and Nursery Insecticide/Miticide contains 2/3 pound active ingredient per gallon.
*Cis isomers 97% minimum, trans isomers 3% maximum.



KEEP OUT OF REACH OF CHILDREN
CAUTION

[Optional Referral Statements:
(outer box/carton:) See containers inside for additional Precautionary Statements and complete Directions For Use.
(outer booklet:) See inside for additional Precautionary Statements and complete Directions For Use.
PEEL DOWN FOR DIRECTIONS
(base of booklet: See attached booklet for additional Precautionary Statements and complete Directions For Use.)]

FIRST AID	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment	
If swallowed	<ul style="list-style-type: none">• Call a 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 inhaled	<ul style="list-style-type: none">• 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 further treatment advice.
If on skin or clothing	<ul style="list-style-type: none">• 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 in eyes	<ul style="list-style-type: none">• 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.
NOTE TO PHYSICIAN	
This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. For emergency medical treatment, contact the Rocky Mountain Poison & Drug Safety at 1-866-673-6671.	

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident,
call CHEMTREC 1-800-424-9300.

Manufactured for:
UPL NA Inc.
PO Box 12219
Research Triangle Park, NC 27709 1-800-438-6071

EPA Reg. No. 70506-23
EPA Est. No.
Net Contents: _____

Hazards to Humans and Domestic Animals

CAUTION

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

Personal Protective Equipment:

Applicators and other handlers (other than mixers and loaders) must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, butyl rubber \geq 14 mils, nitrile rubber \geq 14 mils, neoprene rubber \geq 14 mils, polyvinyl chloride \geq 14 mils, or Viton \geq 14 mils.
- Shoes plus socks

Mixers and Loaders must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, butyl rubber \geq 14 mils, nitrile rubber \geq 14 mils, neoprene rubber \geq 14 mils, polyvinyl chloride \geq 14 mils, or Viton \geq 14 mils.
- Shoes plus socks
- Protective eyewear

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 outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This pesticide is extremely toxic to fish and aquatic invertebrates. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid runoff to water bodies or drainage systems.

NON-TARGET ORGANISM ADVISORY STATEMENT:

This product is highly toxic to bees and other pollinating insects exposed to direct treatment or to residues in/on blooming crops or weeds. Protect pollinating insects by following label directions intended to minimize drift and reduce pesticide risk to these organisms.

DIRECTIONS FOR USE

RESTRICTED USE PESTICIDE

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 applications. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Do not apply this product through any kind of irrigation system.

Do not water the treated area to the point of runoff. Do not make applications during rain.

Do not apply by air.

Do not apply the product into fish pools, ponds, streams, or lakes. Do not apply directly to sewers or storm drains, or to any area like a drain or gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur.

Do not allow the product to enter any drain during or after application.

Do not apply directly to impervious horizontal surfaces such as sidewalks, driveways, and patios except as a spot or crack-and-crevice treatment.

Do not apply or irrigate to the point of runoff.

Do not make applications during rain. Avoid making applications when rainfall is expected before the product has sufficient time to dry (minimum 4 hours).

Rainfall within 24 hours after application may cause unintended runoff of pesticide application.

Do not apply when the wind speed is greater than 15 mph.

For outdoor applications to commercial nurseries:

- Do not apply when the wind speed is greater than 15 mph.
- Applicators are required to select the nozzle and pressure that deliver a medium or coarser droplet size (ASABE S572)

Treat surfaces to ensure thorough coverage but avoid runoff.

To treat insects harbored in voids and cracks-and-crevices, applications must be made in such a manner to limit dripping and avoid runoff onto untreated structural surfaces and plants.

Additional Application Restrictions for Residential Outdoor Surface and Space Sprays:

All outdoor spray applications must be limited to spot or crack and crevice treatments only, except for the following permitted uses:

1. Application to pervious surfaces such as soil, lawn, turf, and other vegetation;
2. Perimeter band treatments of 7 feet wide or less from the base of a man-made structure to pervious surfaces (e.g., soil, mulch, or lawn);
3. Applications to underside of eaves, soffits, doors, or windows permanently protected from rainfall by a covering, overhang, awning, or other structure;
4. Applications around potential exterior pest entry points into man-made structures such as doorways and windows, when limited to a band not to exceed one inch;
5. Applications to vertical surfaces (such as the side of a man-made structure) directly above impervious surfaces (e.g., driveways, sidewalks, etc.), up to 2 feet above ground level;
6. Applications to vertical surfaces directly above pervious surfaces, such as soil, lawn, turf, mulch or other vegetation) only if the pervious surface does not drain into ditches, storm drains, gutters, or surface waters.

Spot treatments must not exceed two square feet in size (for example, 2 ft. by 1 ft. or 4 ft. by 0.5 ft.).

For soil or foliar applications, do not apply by ground within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish farm ponds.

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 restricted-entry interval (REI) of **12** hours.

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

- Coveralls.
- Chemical-resistant gloves, such as barrier laminate or butyl rubber ≥ 14 mils or nitrile rubber ≥ 14 mils or neoprene rubber ≥ 14 mils or polyvinyl chloride ≥ 14 mils, or Viton ≥ 14 mils.
- Shoes plus socks.

California Specific Requirements for Greenhouse Applicators and Harvesters

In addition to following all applicable precautionary statements, the following is required for greenhouse applicators and harvesters:

Greenhouse Applicator: Greenhouse applicators must wear a full body chemical-resistant protective suit (such as barrier laminate, butyl rubber, nitrile rubber, polyvinyl chloride, or equivalent).

Reapplication Interval: Reapplications to greenhouses must be at intervals of 30 days or longer.

Greenhouse Harvesters: Greenhouse harvesters must wear regular-length gloves plus a long sleeved shirt or elbow-length (gauntlet type) gloves during the 30 days following application.

Non-Agricultural Use Requirements

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

Do not allow people or pets on treated surfaces until the spray has dried.

Do not touch treated surface until dry.

STORAGE AND DISPOSAL

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

Pesticide Storage: Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use replace lids and close tightly. Do not put concentrate or dilute material into food or drink container.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills.

To Confine Spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal: Pesticide wastes are toxic. Do not contaminate water, food or feed by storage or disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Dispose of excess or waste pesticide by use according to label directions, or contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Clean container 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 $\frac{1}{4}$ 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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Ornamentals
Turf and Grass Areas
Imported Fire Ant Quarantine Treatment
Larval Control in Potting Media of Containerized Plants
Impregnation and Application on Dry Bulk Fertilizers
Pest Control on Outside Surfaces and Around Buildings**

UP-STAR SC LAWN AND NURSERY INSECTICIDE/MITICIDE

General Application Instructions

UP-Star SC Lawn and Nursery Insecticide/Miticide formulation mixes readily with water and other aqueous carriers, and controls a wide spectrum of insects and mites on ornamentals, trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in greenhouses and outdoor nurseries, and interiorscapes including hotels, shopping malls, office buildings, etc., and outdoor landscapes such as around residential dwellings, parks, institutional, public, commercial and industrial buildings, recreational, athletic fields, home lawns, golf courses and sod farms. Non-bearing crops are perennial crops that will not produce a harvestable raw agricultural commodity during the season of application.

UP-Star SC Lawn and Nursery Insecticide/Miticide may be tank-mixed with other products, including insect growth regulators. When tank mixing UP-Star SC with other products, observe all precautions and limitations on each separate product label. The addition of spreader stickers is not necessary. The physical compatibility of UP-Star SC may vary with different sources of pesticide products and local cultural practices. Any tank mixture which has not been previously tested should be prepared on a small scale (pint or quart jar) using the proper proportions of chemicals and water to ensure the physical compatibility of the mixture.

The following procedure is recommended for preparation of a new tank mix, unless specified otherwise in label directions: (1) Add wettable powders to tank water, (2) Agitate, (3) Add liquids and flowables, (4) Agitate, (5) Add emulsifiable concentrates, and (6) Agitate. If a mixture is found to be incompatible following this order of addition, try reversing the order of addition, or increase the volume of water. **Note:** If the tank-mixture is found to be compatible after increasing the amount of water, then the sprayer will need to be recalibrated for a higher volume application. Do not allow tank mix to stand overnight.

Do not apply more than 0.1 lb ai/acre (20 fl. ozs. of UP-Star SC Lawn and Nursery Insecticide/Miticide) in a single application, and no more than 0.2 lb ai/acre/year (40 fl. ozs.) for outdoor applications.

Note: For large infestations of ants, imported fire ants, and mole crickets, a single application of 0.2 lb. ai/acre (40 fl. ozs.) may be applied once per year.

RESISTANCE

For resistance management, UP-STAR SC Lawn and Nursery Insecticide/Miticide contains a Group 3A insecticide. Any insect/mite population may contain individuals naturally resistant to UP-STAR SC Lawn and Nursery Insecticide/Miticide and other Group 3A insecticides/acaracides. The resistant individuals may dominate the insect/mite population if this group of insecticides/acaracides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay insecticide/acaricide resistance, take the following steps:

- Rotate the use of UP-STAR SC Lawn and Nursery Insecticide/Miticide or other Group 3A insecticides/acaracides within a growing season, or among growing seasons, with different groups that control the same pest.
- Use tank mixtures with insecticides/acaracides 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 a 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 still may 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/acaricides 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 advisors for any additional pesticide resistance-management and/or IPM recommendations for that specific site and pest problems in your area.
- For further information or to report suspected resistance, contact UPL at 1-800-438-6071.

MANDATORY SPRAY DRIFT MANAGEMENT

Airblast Applications:

- Sprays must be directed into the canopy.
- Do not apply when wind speeds exceed 15 mph at the application site.
- User must turn off outward pointing nozzles at row ends and when spraying outer row.
- 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 select nozzle and pressure that deliver medium or coarser droplets (ASABE S572).
- Do not apply when wind speeds exceed 15 mph 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.

Handheld Technology Applications:

- Take precautions to minimize spray drift.

VEGETATIVE FILTER STRIPS

Construct and maintain a vegetative filter strip, according to the width specified below, of grass or other permanent vegetation between the field edge and nearby down gradient aquatic habitat (such as, but not limited to, lakes; reservoirs; rivers; streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing (name of pyrethroid) onto fields where a maintained vegetative filter strip of at **least 25 feet** exists between the field edge and where a down gradient aquatic habitat exists. This minimum required width of 25 feet may be reduced or removed under the following conditions:

- For Western irrigated agriculture, a maintained vegetative filter strip of at least 10 feet wide is required. Western irrigated agriculture is defined as irrigated farmland in the following states: WA, OR, CA, ID, NV, UT, AZ, MT, WY, CO, NM, and TX (west of I-35).
 - For Western irrigated agriculture, if a sediment control basin is present, a vegetative filter strip is not required.
- In all other areas, a vegetative filter strip with a minimum width of 25 feet is required, unless the following conditions are met. The vegetative filter strip requirement may be reduced from 25 feet to 15 feet if at least one of the following applies:
 - The area of application is considered prime farmland (as defined in 7 CFR § 657.5).
 - Conservation tillage is being implemented on the area of application. Conservation tillage is defined as any system that leaves at least 30% of the soil surface covered by residue after planting. Conservation tillage practices can include mulch-till, no-till, or strip-till.
 - A functional terrace system is maintained on the area of application.
 - Water and sediment control basins for the area of application are functional and maintained.
 - The area of application is less than or equal to 10 acres.

For further guidance on vegetated filter strips, refer to the following publication for information on constructing and maintaining effective buffers: Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. <https://www.regulations.gov/document?D=EPA-HQ-OPP-2008-0331-0175>.

Following best management practices can help reduce risk to terrestrial pollinators. Examples of best management practices include applying pesticides in the evening and at night when pollinators are not foraging and checking to confirm hive locations before spraying. For additional resources on pollinator best

management practices, visit <https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators>.

Managed pollinator protection plans are developed by states/tribes to promote communication between growers, landowners, farmers, beekeepers, pesticide users, and other pest management professionals to reduce exposure of bees to pesticides. If available, visit state plans for additional information on how to protect pollinators.

How to Report Bee Kills

It is recommended that users contact both the state lead agency and the U.S. Environmental Protection Agency to report bee kills due to pesticide application. Bee kills can be reported to EPA at beekill@epa.gov. To contact your state lead agency, see the current listing of state pesticide regulatory agencies at the National Pesticide Information Center's website: http://npic.orst.edu/reg/state_agencies.html.

UP-Star SC Lawn and Nursery Insecticide/Miticide Dilution Chart for Turf and Ornamental Uses

- **Rate in amount of Active Ingredient per acre.**
- **Application Volume in Gallons per acre**

Application Volume: Gallons Per Acre	Application Rate: lb. a.i./Acre	Fluid Ounces* of UP-Star SC Lawn and Nursery Insecticide/Miticide Diluted to These Volumes of Finished Spray			
		1 Gallon	25 Gallons	50 Gallons	100 Gallons
50	0.025	0.1	2.5	5.0	10.0
50	0.05	0.2	5.0	10.0	20.0
50	0.1	0.4	10.0	20.0	40.0
50	0.2	0.8	20.0	40.0	80.0
100	0.025	0.05	1.25	2.5	5.0
100	0.05	0.1	2.5	5.0	10.0
100	0.1	0.2	5.0	10.0	20.0
100	0.2	0.4	10.0	20.0	40.0
150	0.025	0.03	0.83	1.67	3.3
150	0.05	0.07	1.67	3.33	6.7
150	0.1	0.13	3.33	6.67	13.3
150	0.2	0.27	6.67	13.33	26.7
200	0.025	0.025	0.63	1.25	2.5
200	0.05	0.05	1.25	2.5	5.0
200	0.1	0.1	2.5	5.0	10.0
200	0.2	0.2	5.0	10.0	20.0
250	0.025	--	0.5	1.0	2.0
250	0.05	--	1.0	2.0	4.0
250	0.1	--	2.0	4.0	8.0
250	0.2	--	4.0	8.0	16.0
300	0.025	--	0.42	0.83	1.7
300	0.05	--	0.83	1.67	3.3
300	0.1	--	1.67	3.33	6.7
300	0.2	--	3.33	6.67	13.3

*To convert to milliliters, multiply by 29.57

1 fluid oz. = 29.57 ml = 2 tablespoons = 6 teaspoons. Do not use household utensils to measure UP-Star SC Lawn and Nursery Insecticide/Miticide.

UP-Star SC Lawn and Nursery Insecticide/Miticide Dilution Chart for Turf and Ornamental Uses

- Rate in amount of Active Ingredient per acre.
- Application Volume in Gallons per 1,000 SqFt

Fluid Ounces* of UP-Star SC Lawn and Nursery Insecticide/Miticide Diluted to these Volumes of Finished Spray						
Application Volume: Gallons Per 1,000 sq. ft.	Application Rate: lb. a.i./Acre	1 Gallon	10 Gallons	25 Gallons	50 Gallons	100 Gallons
0.5	0.05	0.5	5.0	12.5	25.0	50.0
0.5	0.1	0.1	10.0	25.0	50.0	100.0
0.5	0.2	2.0	20.0	50.0	100.0	200.0
0.75	0.05	0.33	3.33	8.33	16.67	33.33
0.75	0.1	0.67	6.67	16.67	33.33	66.67
0.75	0.2	1.33	13.33	33.33	66.67	133.33
1	0.05	0.25	2.5	6.25	12.5	25.0
1	0.1	0.5	5.0	12.5	25.0	50.0
1	0.2	1	10.0	25.0	50.0	100.0
1.5	0.05	0.17	1.67	4.17	8.33	16.67
1.5	0.1	0.33	3.33	8.33	16.67	33.33
1.5	0.2	0.67	6.67	16.67	33.33	66.67
2	0.05	0.13	1.25	3.13	6.25	12.5
2	0.1	0.25	2.5	6.25	12.5	25.0
2	0.2	0.5	5.0	12.5	25.0	50.0
2.3 ^a	0.05	0.11	1.09	2.72	5.43	10.87
2.3 ^a	0.1	0.22	2.17	5.43	10.87	21.74
2.3 ^a	0.2	0.43	4.35	10.87	21.74	43.48
3	0.05	--	0.83	2.09	4.17	8.33
3	0.1	0.17	1.66	4.17	8.33	16.67
3	0.2	0.33	3.33	8.33	16.67	33.33
4	0.05	--	0.63	1.56	3.13	6.25
4	0.1	0.13	1.25	3.13	6.25	12.5
4	0.2	0.25	2.5	6.25	12.5	25.0

*To convert to milliliters, multiply by 29.57

^a100 gallons per acre

1 fluid oz. = 29.57 ml = 2 tablespoons = 6 teaspoons. Do not use household utensils to measure UP-Star SC Lawn and Nursery Insecticide/Miticide.

UP-Star SC Lawn and Nursery Insecticide/Miticide Dilution Chart for Turf and Ornamental Uses

- **Rate in Fluid Ounces of Product per 1,000 SqFt.**
- **Application Volume in Gallons per 1,000 SqFt**

Application Volume:	Application Rate:	Fluid Ounces* of UP-Star SC Diluted to these Volumes of Finished Spray			
Gallons Per 1,000 Sq. Ft.	Fluid Ounces per 1,000 Sq. Ft.	1 Gallon	5 Gallons	10 Gallons	100 Gallons
1.0	0.125	0.125	0.63	1.25	12.5
1.0	0.25	0.25	1.25	2.5	25.0
1.0	0.5	0.5	2.5	5.0	50.0
1.0	1.0	1.0	5.0	10.0	100.0
2.0	0.125	---	0.31	0.63	6.3
2.0	0.25	0.13	0.63	1.25	12.5
2.0	0.5	0.25	1.25	2.5	25.0
2.0	1.0	0.5	2.5	5.0	50.0
2.3 ^a	0.125	---	0.27	0.54	5.4
2.3 ^a	0.25	0.11	0.54	1.08	10.8
2.3 ^a	0.5	0.22	1.09	2.17	21.7
2.3 ^a	1.0	0.44	2.17	4.35	43.5
3.0	0.125	--	0.21	0.42	4.2
3.0	0.25	--	0.42	0.83	8.3
3.0	0.5	0.17	0.83	1.67	16.7
3.0	1.0	0.33	1.67	3.33	33.3
4.0	0.125	--	0.15	0.31	3.1
4.0	0.25	--	0.31	0.63	6.3
4.0	0.5	0.13	0.63	1.25	12.5
4.0	1.0	0.25	1.25	2.5	25.0
4.6 ^b	0.125	--	0.14	0.27	2.7
4.6 ^b	0.25	--	0.27	0.54	5.4
4.6 ^b	0.5	0.11	0.54	1.09	10.9
4.6 ^b	1.0	0.22	1.09	2.17	21.7
5.0	0.125	--	0.13	0.25	2.5
5.0	0.25	--	0.25	0.5	5.0
5.0	0.5	0.1	0.5	1.0	10.0
5.0	1.0	0.2	1.0	2.0	20.0
6.9 ^c	0.125	--	--	0.18	1.8
6.9 ^c	0.25	--	0.18	0.36	3.6
6.9 ^c	0.5	--	0.36	0.72	7.2
6.9 ^c	1.0	0.15	0.72	1.45	14.5
10.0	0.125	--	--	0.13	1.3
10.0	0.25	--	0.13	0.25	2.5
10.0	0.5	--	0.25	0.5	5.0
10.0	1.0	0.1	0.5	1.0	10.0

*To convert to milliliters, multiply by 29.57

^a100 gallons per acre

^b200 gallons per acre

^c300 gallons per acre

Do not use household utensils to measure UP-Star SC Lawn and Nursery Insecticide/Miticide.

Formula for Determining the Active Ingredient Content of the Finished Spray Mixture: The following formula may be used to determine the percent active ingredient that is in the spray tank after mixing UP-Star SC:

$$\frac{(7.9)(\text{Fl. Oz of UP-Star SC added to tank})}{(\text{Gallons of finished spray mix})(128)} = \text{Percent Active Ingredient of spray mix}$$

ORNAMENTALS IN GREENHOUSES, LATH HOUSES, SHADE HOUSES AND OUTDOOR NURSERIES, INCLUDING NON-BEARING FRUIT AND NUT TREES

APPLICATION INSTRUCTIONS

Apply 0.025 to 0.2 lb. a.i./A (5 to 40 fl. ozs.) or 0.125 to 1.0 fluid ounce per 1,000 square feet of UP-Star SC. UP-Star SC may be diluted and applied in various volumes of water providing that the maximum label rate (0.2 lb. a.i./A or 40 fl. ozs.; 1.0 fluid ounce per 1,000 square feet) is not exceeded (refer to Dilution Chart for specific instructions). UP-Star SC may be applied through low volume application equipment by dilution with water or other carriers and providing that the maximum label rate (0.2 lb. a.i./A or 40 fl. ozs.; 1.0 fluid ounce per 1,000 square feet) is not exceeded.

ORNAMENTAL APPLICATION RATES

The application rates listed in the following table will provide excellent control of the respective pests under typical conditions. However, at the discretion of the applicator, UP-Star SC may be applied at up to 0.2 lb. a.i./A (40 fl. oz.) or 1 fluid ounce per 1,000 square feet to control each of the pests listed in this Table.

Application Rate of UP-Star SC Lawn and Nursery Insecticide/Miticide				
Pest	Fluid Ounces per 1,000 Square Feet	lb. a.i./Acre	Fluid Ounces per Acre	Other Use Precautions and Restrictions
Aphids Bagworms ¹ Cutworms Elm Leaf Beetles Fall Webworms Lace Bugs Leaf Feeding Caterpillars Plant Bugs (including Lygus spp.) Tent Caterpillars	0.125 – 0.25	0.025 – 0.05	5 - 10	Certain cultivars may be sensitive to the final spray solution. A small number of plants should be treated and observed for one week prior to application to the entire planting. Apply with ground equipment only. Do not apply when wind direction favors downwind drift towards near-by water bodies. Do not apply when wind velocity exceeds 10 mph. Avoid application when wind gusts approach 10 mph.
Beet Armyworm Black Vine Weevil (Adults) Brown Soft Scales Broad Mites Budworms California Red Scale (Crawlers) ² Centipedes Citrus Thrips Clover Mites Crickets Diaprepes (Adults) Earwigs European Red Mite Flea Beetles Fungus Gnats (Adults) Grasshoppers Gypsy Moth Caterpillars Leafhoppers Leafrollers Mealybugs Millipedes Mites Orchid Weevil Pillbugs Pine Needle Scales (Crawlers) ² San Jose Scales (Crawlers) ² Sowbugs Spider Mites Spiders Thrips Tip Moths Twig Borers ² Wasps Weevils Whiteflies	0.25 – 0.5	0.05 – 0.1	10 – 20	Do not apply when a temperature inversion exists. Apply the specified application rate as a full coverage foliar spray. Typical application volume is 100 gallons per acre. Repeat treatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity. Repeat applications are permitted provided that the maximum label rate is not exceeded. Apply using the largest nozzle size compatible with adequate coverage. Do not apply if rain is expected within 12 hours (or whatever time is necessary for the spray to dry). Do not apply by ground equipment within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds. When treating tall trees (>15 feet) from the ground with high pressure sprays or during any application with air assisted equipment (mist blower) do not apply within 150 feet of aquatic areas. Use of an alternate class of chemistry in a treatment program is recommended to prevent or delay pest resistance.

Application Rate of UP-Star SC Lawn and Nursery Insecticide/Miticide				
Pest	Fluid Ounces per 1,000 Square Feet	lb. a.i./Acre	Fluid Ounces per Acre	Other Use Precautions and Restrictions
Ants Imported Fire Ants** Japanese Beetle (Adults) Leafminers Pecan Leaf Scorch Mite Pine Shoot Beetle (Adults)	0.5 – 1.0	0.1 - 0.2	20 – 40	The following procedures must be followed to help achieve maximum control of the pest: Treat non-porous surfaces only in areas protected from rainfall and spray from sprinklers with low volume applications using 0.5 to 1.0 fl. oz. of product per gallon of water and applying this dilution at the rate of one gallon per 1,000 square feet.

¹**Bagworms:** Apply when larvae begin to hatch and spray larvae directly. Applications when larvae are young will be most effective.

²**Scale Crawlers and Twig Borers:** Treat trunks, stems and twigs in addition to plant foliage.

**For foraging ants.

TURF (GOLF COURSES AND SOD FARMS) AND GRASS AREAS (INCLUDING GOLF COURSES, SOD FARMS, HOME LAWNS, LAWN AREAS AROUND PARKS, INSTITUTIONAL, PUBLIC, COMMERCIAL AND INDUSTRIAL BUILDINGS, RECREATIONAL AND ATHLETIC FIELDS).

APPLICATION INSTRUCTIONS

DO NOT USE THIS PRODUCT ON GOLF COURSES OR SOD FARMS IN NASSAU COUNTY OR SUFFOLK COUNTY, NEW YORK.

Apply UP-Star SC Lawn and Nursery Insecticide/Miticide as a surface or sub-surface treatment. Use application volumes of up to 10 gallons per 1,000 square feet to get uniform coverage when treating dense and or long turf foliage.

For low volume applications, less than 2 gallons/1,000 square feet, immediate irrigation of treated area with at least 0.25 inches of water following application to ensure efficacy of listed sub-surface pests including Mole Crickets.

In New York State, this product may NOT be applied to turf within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

In New York State, do make a single repeat application of UP-Star SC if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

APPLICATION RATES

The application rates listed in the following table will provide excellent control of the respective pests under typical conditions. However, at the discretion of the applicator¹, UP-Star SC may be applied at up to 0.1 lb. a.i./A (20 fl. oz.) to control each of the pests listed in this Table (0.2 lb. a.i./A or 40 fl. ozs. of UP-Star SC for ants, imported fire ants and mole crickets)¹³.

¹ During periods of high pest pressure or for maximum residual control.

Pests	lb. Active Ingredient /Acre	Application Rate UP-Star SC Lawn and Nursery Insecticide/Miticide	Other Use Precautions and Restrictions
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Pests	lb. Active Ingredient /Acre	Application Rate UP-Star SC Lawn and Nursery Insecticide/Miticide		Other Use Precautions and Restrictions
Armyworms ³ Cutworms ³ Sod Webworm ³	0.05	10 fl. oz. per acre	0.25 fl. oz. per 1,000 sq. ft.	Apply with ground application equipment only (and apply with nozzles not more than two feet above the turf). Do not apply when wind conditions favor downwind drift towards near-by water bodies.
Annual Bluegrass Weevil (<i>Hyperodes</i>) (Adult) ⁴ Ants Billbugs (Adult) ⁵ Black Turfgrass Ataenius (Adult) ⁶ Centipedes Chinch Bugs ⁷ Crickets Earwigs Fleas (Adult) Grasshoppers Leafhoppers Mealybugs Millipedes Mites ⁸ Mole Cricket (Adult) ⁹ Mole Cricket (Nymph) ¹⁰ Pillbugs Sowbugs	0.05 – 0.1	10 - 20 fl. oz. per acre	0.25 – 0.5 fl. oz. per 1,000 sq. ft.	Do not apply when wind velocity exceeds 10 mph. Avoid application when wind gusts approach 10 mph. Do not apply when a temperature inversion exists. Apply using the largest droplet size compatible with adequate coverage. Do not apply for surface feeding pests if rain is expected within 12 hours (or whatever time is necessary for the spray to dry). Do not apply by ground equipment within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds.
Fleas (Larvae) ¹¹ Imported Fire Ants Japanese Beetle (Adult) Ticks ¹²	0.1	20 fl. oz. per acre	0.5 fl. oz. per 1,000 sq. ft.	Do not apply when turf areas are water-logged or soil is saturated with water (i.e., will not accept irrigation).
Ants Imported Fire Ants ¹⁴ Mole Crickets	0.2 ¹³	40 ¹³ fl. oz. per acre	1 ¹³ fl. oz. per 1,000 sq. ft.	

Footnotes:

³**Armyworms, Cutworms and Sod Webworms:** To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the grass area is being maintained at a mowing height of greater than 1 inch, then higher application rates (up to 0.1 lb. a.i./A or 20 fl. oz. of UP-Star SC) may be required during periods of high pest pressure.

⁴**Annual Bluegrass Weevil (*Hyperodes*) adults:** Applications should be timed to control adult weevils as they leave their overwintering sites and move into grass areas. This movement generally begins when *Forsythia* is in full bloom and concludes when flowering dogwood (*Cornus florida*) is in full bloom. Consult your State Cooperative Extension Service for more specific information regarding application timing.

⁵**Billbug adults:** Apply when adult billbugs are first observed during April and May. Degree day models have been developed to optimize application timing. Consult your State Cooperative Extension Service for information specific to your region. In temperate regions, spring applications targeting billbug adults will also provide control of over-wintered chinch bugs.

⁶Black Turfgrass Ataenius adults: Apply during May and July to control the first and second generation of black turfgrass ataenius adults, respectively. Time the May application to coincide with the full bloom stage of Vanhoutte spiraea (*Spiraea vanhouttei*) and horse chestnut (*Aesculus hippocastanum*). Time the July application to coincide with the blooming of Rose of Sharon (*Hibiscus syriacus*).

⁷Chinch Bugs: Chinch Bugs infest the base of grass plants and are often found in the thatch layer. Irrigation of the grass area before treatment will optimize the penetration of the insecticide to the area where the chinch bugs are located. Use higher volume applications if the thatch layer is excessive or if a relatively long mowing height is being maintained. Chinch Bugs can be one of the most difficult pests to control in grasses and the higher application rates (up to 0.1 lb. a.i./A or 20 fl. oz.) may be required to control populations that contain both nymphs and adults during the middle of the summer.

⁸Mites: To ensure optimal control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application, five to seven days after the first, may be necessary to achieve acceptable control.

⁹Mole Cricket adults: Achieving acceptable control of adult mole crickets is difficult because preferred grass areas are subject to continuous invasion during the early spring by this extremely active stage. Apply as late in the day as possible and water in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized. Grass areas that receive pressure from adult mole crickets should be treated at peak egg hatch to ensure optimum control of subsequent nymph populations (see below).

¹⁰Mole Cricket nymphs: Grass areas that received intense adult mole cricket pressure in the spring should be treated immediately prior to peak egg hatch. Optimal control is achieved at this time because young nymphs are more susceptible to insecticides and they are located near the soil surface where the insecticide is most concentrated. Control of larger, more damaging, nymphs later in the year may require both higher application rates and more frequent applications to maintain acceptable control. Apply as late in the day as possible and water in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized.

¹¹Flea larvae: Flea larvae develop in the soil of shaded areas that are accessible to pets or other animals. Use a higher volume application when treating these areas to ensure penetration of the insecticide into the soil. Note: if the lawn area is being treated with UP-Star SC at 0.05 lb. a.i./A (10 fl. oz.) for adult flea control, then the larval application rate may be achieved by doubling the application volume.

¹²Ticks (Including ticks that may transmit Lyme Disease and Rocky Mountain Spotted Fever): Do not make spot applications. Treat the entire area where exposure to ticks may occur. Use higher spray volumes when treating areas with dense ground cover or heavy leaf litter. Ticks may be reintroduced from surrounding areas on host animals. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed activity. Do not apply more than once per seven days. Do not allow public use of treated areas during application or until sprays have dried.

Deer ticks (*Ixodes spp.*) have a complicated life cycle that ranges over a two year period and involves four life stages. Applications should be made in the late fall and/or early spring to control adult ticks that are usually located on brush or grass above the soil surface and in mid to late spring to control larvae and nymphs that reside in the soil and leaf litter.

American dog ticks may be a considerable nuisance in suburban settings, particularly where homes are built on land that was previously field or forest. These ticks commonly congregate along paths or roadways where humans are likely to be encountered. Applications should be made as necessary from mid-spring to early fall to control American dog tick larvae, nymphs and adults.

¹³Note: For large infestations of ants, imported fire ants and mole crickets, a single application of 0.2 lb. a.i./A (40 fl. oz. of UP-Star SC) may be applied once per year.

¹⁴Imported Fire Ants: Control will be optimized by combining broadcast applications that will control foraging workers and newly mated fly-in queens with mound drenches that will control existing colonies. If the soil is not moist, then it is important to irrigate before application or use a high volume application. Apply broadcast treatments of 0.2 lb. a.i./A (40 fl. oz. of UP-Star SC). Treat mounds by diluting 1 teaspoon of UP-Star SC Insecticide per gallon of water and applying 1 to 2 gallons of finished spray per mound. The mounds should be treated with sufficient force to break their apex and allow the insecticide solution to flow into the ant tunnels. Also treat a four foot diameter circle around the mound. For best results, apply in cool weather (65 – 80 °F) or in early morning or late evening hours. Note: a spray rig that is calibrated to apply 0.2 lb. a.i./A (40 fl. oz.) of UP-Star SC in 5 gallons per 1,000 square feet contains the approximate dilution (1 teaspoon per gallon) that is required for fire ant mound drenches in the spray tank.

IMPORTED FIRE ANT QUARANTINE TREATMENT

Against Imported Fire Ants (IFA) in Potting Media (including balled and containerized nursery grown ornamental trees, shrubs, plants, flowers, conifers, bushes, Christmas trees, and non-bearing fruit and nut-trees). UP-Star SC Lawn and Nursery Insecticide/Miticide can be used in accordance with the USDA Imported Fire Ant Quarantine Program. UP-Star SC may be applied either soil incorporated, as a topical application or as a high volume drench treatment.

Soil Incorporation: Incorporate the appropriate volume of UP-Star SC Lawn and Nursery Insecticide/Miticide (see table below) per cubic yard of potting media by diluting it in water (typically 1 quart to 1 gallon per cubic yard of media) and sprinkling or spraying it onto the media. The applications are based on the dry bulk density of the potting media. When used in accordance with USDA guidelines, this application will provide a 6 month certification period.

Soil Incorporation Rate of UP-Star SC Lawn and Nursery Insecticide/Miticide for Control of IFA In Potting Media

Potting Media Bulk Density (lbs. per cubic yard)	Fluid ounces of UP-Star SC Lawn and Nursery Insecticide/Miticide in one cubic yard
200	1.9
400	3.8
600	5.7
800	7.6
1000	9.5
1200	11.4
1400	13.3

Use proportional amounts of UP-Star SC for potting media with bulk densities not listed.

Topical Application: Mix UP-Star SC Lawn and Nursery Insecticide/Miticide in 1,000 ounces of water based on container size and bulk density of the potting media (see table below). Apply one (1) ounce of the mix to each container evenly distributed over the surface of the potting media. Irrigate all treated containers with 1.5 inches of water following application. When used in accordance with USDA guidelines, this application will provide a 6 month certification period.

Topical Drench Application Rate of UP-Star SC Lawn and Nursery Insecticide/Miticide for Control of IFA In Potting Media

	Fluid ounces of UP-Star SC Lawn and Nursery Insecticide/Miticide per 1,000 ounces of water	
Potting Media Bulk Density (lbs. per cubic yard)	3 Qt. Container	4 Qt. Container
200	3.6	5.2
400	7.2	10.4
600	10.8	15.6
800	14.4	20.8
1000	18.0	26.0
1200	21.6	31.2
1400	25.2	36.4

Use proportional amounts of UP-Star SC Lawn and Nursery Insecticide/Miticide for potting media with bulk densities not listed.

High Volume Drench: Apply UP-Star SC Lawn and Nursery Insecticide/Miticide as a high volume drench by mixing the appropriate amount of product based on the bulk density in 100 gallons of water (see table below). Apply mix to individual containers to the point of saturation. The amount of mix used for each plant is generally 1/5 the volume of the container. When used in accordance with USDA guidelines, this application will provide a 6 month certification period.

High Drench Application Rate of UP-Star SC Lawn and Nursery Insecticide/Miticide for Control of IFA In Potting Media

Potting Media Bulk Density (lbs. per cubic yard)	Fluid ounces of UP-Star SC Lawn and Nursery Insecticide/Miticide in 100 gallons
200	2.4
400	4.8
600	7.2
800	9.6
1000	12.0
1200	14.4
1400	16.8

Use proportional amounts of Fluid ounces of UP-Star SC for potting media with bulk densities not listed.

LARVAL CONTROL IN POTTING MEDIA OF CONTAINERIZED PLANTS

Black Vine Weevil Larval Control - Preventative Treatment - Topical Drench: For preventative control of black vine weevil larvae in containerized plants, dilute UP-Star SC Lawn and Nursery Insecticide/Miticide at the rate of 10 to 40 fl. ozs (0.05 to 0.2 lb. a.i.) per 100 gallons and apply as a drench at the rate of 4 to 8 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container. Diluting 10 fluid ounces of UP-Star SC per 100 gallons and applying 8 fluid ounces of finished spray per 6 inch (diameter) container will provide black vine weevil larval control for one growing season when the application is made in the spring. Diluting 20 to 40 fluid ounces of UP-Star SC per 100 gallons and applying 8 fluid ounces of finished spray per 6 inch (diameter) container will provide black vine weevil larval control for two growing seasons when the application is made in the spring.

White Grub Control - Preventative Treatment - Topical Drench: For preventative control of white grubs (including, but not limited to, Japanese beetle, oriental beetle and European chafer) in containerized plants, dilute UP-Star SC at the rate of 40 to 80 fluid ounces (0.2 to 0.4 lb. a.i.) per 100 gallons and apply as a drench at the rate of 4 to 8 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container. Use the higher application rate for a longer period of control.

Black Vine Weevil and White Grub Larval Control - Preventative Treatment - Media Incorporation: For preventative control of black vine weevil and white grub larvae in containerized plants, incorporate the appropriate volume of UP-Star SC (see table below) per cubic yard of potting media by diluting it in water (typically 1 quart to 1 gallon per cubic yard of media) and sprinkling or spraying it onto the media. Use the higher application rates for longer periods of control.

Potting Media Bulk Density (lbs. per cubic yard)	Fluid ounces of UP-Star SC Lawn and Nursery Insecticide/Miticide in one cubic yard			
	10 ppm	15 ppm	20 ppm	25 ppm
200	0.4	0.6	0.8	1.0
300	0.6	0.9	1.2	1.5
400	0.8	1.2	1.6	2.0
500	1.0	1.5	2.0	2.5
600	1.2	1.8	2.4	3.0
700	1.4	2.1	2.8	3.5
800	1.6	2.4	3.2	4.0
900	1.8	2.7	3.6	4.5
1000	2.0	3.0	4.0	5.0

The application rates listed above are based on the dry bulk density of the potting media.

Use proportional volumes of UP-Star SC for potting media with dry bulk densities that are not listed above.

Black Vine Weevil Larval Control - Curative Treatment - Topical Drench: To control black vine weevil larvae infesting containerized plants, dilute UP-Star SC at the rate of 10 to 40 fl. ozs. (0.05 to 0.2 lb. a.i.) per 100 gallons and apply as a drench at the rate of 8 to 16 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container.

Bare-root Treatment for Preventative Root Weevil Larvae - Control: To protect treated roots of field grown nursery stock from feeding by root weevil larvae, dilute one gallon of UP-Star SC in 100 gallons of water and treat the bare roots of plants that are being transplanted into the field either by dipping the roots into the insecticide solution for ten seconds or by spraying the insecticide solution onto the roots.

Diaprepes Weevil Larval Control - Curative Treatment - Topical Drench: To control *Diaprepes* weevil larvae infesting containerized plants, dilute UP-Star SC at the rate 10 to 40 fl. ozs. (0.05 to 0.2 lb. a.i.) per 100 gallons and apply as a drench at the rate of 8 to 16 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container.

Fungus Gnat Larval Control - Preventative Treatment - Topical Drench: For preventative control of fungus gnat larvae in containerized plants, dilute UP-Star SC at the rate of 20 to 40 fl. ozs. (0.1 to 0.2 lb. a.i.) per 100 gallons and apply as a drench at the rate of 4 to 8 fl. ozs. of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container. Use the higher application rate for a longer period of control.

Fungus Gnat Larval Control - Curative Treatment - Topical Drench: To control fungus gnat larvae infesting containerized plants, dilute UP-Star SC at the rate of 10 to 40 fl. ozs. (0.05 to 0.2 lb. a.i.) per 100 gallons and apply as a drench at the rate of 8 to 16 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container.

IMPREGNATION AND APPLICATION OF UP-STAR SC ON DRY BULK TURF FERTILIZERS

UP-Star SC Lawn and Nursery Insecticide/Miticide may be impregnated on dry bulk fertilizers. When applied as directed, UP-Star SC/dry bulk fertilizer mixtures provide insect control equal to that provided by the same rates of UP-Star SC applied in water.

Impregnation: Apply using a minimum 100 pounds of dry bulk fertilizer per acre with the specified amount of UP-Star SC per acre. Use a closed rotary-drum mixer or a similar type of closed blender equipped with suitable spray equipment. Position the spray nozzle(s) to provide a uniform, fine spray pattern over the tumbling fertilizer for thorough coverage. The physical properties of fertilizers vary, particularly in liquid absorptive capacity. When absorptivity is sufficient, simple spray impregnation of the fertilizer with UP-Star SC provides a satisfactory dry mixture. If the absorptive capacity is inadequate, use of a highly absorptive powder is required to provide a dry, flowable mixture. Microcel E (Johns Manville Products Corporation) is a recommended absorbent powder. Generally less than 2% by weight of Microcel E is required. **DO NOT** impregnate UP-Star SC onto straight coated ammonium nitrate or straight limestone because these materials will not absorb the insecticide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with UP-Star SC.

Determine the amount of UP-Star SC Lawn and Nursery Insecticide/Miticide actually required in the preparation of individual fertilizer mixtures carefully for each production operation. This is necessary to ensure that the amount of pesticide actually contained in the mixture applied to the soil represents the correct rate of use. Bulk fertilizer impregnated with UP-Star SC should be applied immediately, not stored.

All individual Federal and State regulations relating to bulk dry fertilizer blending, registration, labeling, and application of the mixtures are the responsibility of the individual and/or company selling the fertilizer and UP-Star SC mixture.

Fertilizer for this use should be Turf fertilizers recommended for specific regions.

PEST CONTROL ON OUTSIDE SURFACES AND AROUND BUILDINGS

For control of Ants, Bees, Biting Flies, Boxelder Bugs, Centipedes, Crickets, Earwigs, Elm leaf beetle, Fleas, Flies, Millipedes, Mosquitoes, Roaches (including Cockroaches), Silverfish, Sowbugs, (Pillbugs), Spiders (including Black Widow Spiders), Ticks (including Brown Dog Ticks), and Wasps.

Follow additional application restrictions for residential outdoor surface and space sprays under Directions for Use.

Applications to vertical exterior surfaces (e.g, foundations) are permitted to a maximum height of 3 feet from ground level. Sections of vertical exterior surfaces that abut non-porous horizontal surfaces can only be treated if either 1/these sections are protected from rainfall and spray from sprinklers or 2/they do not drain into a sewer, storm drain, or curbside gutter (e.g.,not to sections that abut driveways or sidewalks that drain into streets.

Apply UP-Star SC using a 0.03 to 0.06% emulsion as a residual spray to outside surfaces of buildings including, but not limited to, exterior siding, foundations, porches, window frames, eaves, patios, garages, refuse dumps, lawns such as grass areas adjacent or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, and other residential and non-commercial structures, soil, trunks of woody ornamentals and other areas where pests congregate or have been seen. Use a spray volume of 2 to 10 gallons of emulsion per 1,000 square feet.

Mixing Directions: For 0.03% emulsion, mix 0.5 fluid oz. of UP-Star SC per gallon of water. For 0.06% emulsion, mix 1 fluid oz. UP-Star SC per gallon of water (1 fluid oz. = 2 tablespoons). Do not use household utensils to measure UP-Star SC. Use the higher rate for heavy pest infestation, quicker knockdown or longer residual control. Repeat treatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity. Repeat applications are permitted provided that the maximum label rate is not exceeded.

Perimeter Treatment: Treat a band of soil and vegetation 6 to 10 feet wide around and adjacent to the structure. Also, treat the foundation of the structure to a height of 2 to 3 feet. Apply 0.5 to 1.0 fluid oz. of UP-Star SC per 1,000 square feet in sufficient water to provide adequate coverage (refer to Dilution Chart). For sections of foundation that abut non-porous horizontal surfaces, the treated areas must be protected from rainfall and spray from sprinklers or they do not drain into a sewer, storm drain, or curbside gutter (eg., not to sections that abut driveways or sidewalks that drain into streets).

For Ant and Fire Ant Mounds use UP-Star SC 0.06% emulsion as Drench Method: Apply 1-2 gallons of emulsion to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound. Use the higher volume for mounds larger than 12". For best results, apply in cool weather, such as in early morning or late evening hours, but not in the heat of the day.

GENERAL PRECAUTIONS

For turf treatments apply with ground application equipment only (and apply with nozzles not more than two feet above the grass).

Do not apply when wind conditions favor downwind drift to nearby water bodies.

Do not apply for surface feeding pests if rain is expected within 12 hours (or whatever time is necessary for the spray to dry).

Do not apply when grass areas are water-logged or the soil is saturated with water (i.e., will not accept irrigation).

DEALERS SHOULD SELL IN ORIGINAL PACKAGES ONLY.

**IMPORTANT INFORMATION
READ BEFORE USING PRODUCT**

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 reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks 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 UPL NA Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of UPL NA Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold UPL NA Inc. and Seller harmless for any claims relating to such factors.

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Rev. 10/30/2025