53883-165 4-6-2005 1/16

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:	Date of Issuance:
53883-165	APR 6 2005

Term of Issuance: Conditional

NOTICE OF PESTICIDE:
x Registration
__ Reregistration
(under FIFRA, as amended)

Name of Pesticide Product:
Bifenthrin Nursery Concentrate

Name and Address of Registrant (include ZIP Code):

Control Solutions, INC.
5903 Genoa-Red Bluff
Pasadena, TX 77507-1041

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A), provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of you product under FIFRA section 4.

2. **Make the following labeling changes**:

   a) Revise the EPA Registration Number to read "EPA Reg. No. 53883-165"

   b) Make the following revisions to the Precautionary Statements:

   - Replace "Wash thoroughly with soap and water after handling" with "Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco"

   - Add "Remove and wash contaminated clothing before reuse"

   c) Replace "Inert Ingredients" with "Other Ingredients" in the Ingredients statement.

Signature of Approving Official:	Date:
Le'Oranda Alexander for George T. LaRocca, Product Manager (13), IB/RD (7505C)	APR 6 2005

EPA Form 8570-6

d) In footnote #14 (Imported Fire Ants) on page 10, change "eliminate" to "control" near the end of the first sentence, so that it reads "... mound drenches that will control existing colonies".

e) You should also correct the following minor typographical errors noted during our review:

In the second to last line of the first paragraph of the Agricultural Use Requirements box, change "users" to uses" (" ... only apply to uses of this product ...") and correct "mut" to "must" on the front panel.

f) Delete "In no case shall CONTROL SOLUTIONS, INC. be liable consequential, special, or indirect damages resulting from the use or handling of this product" from the Warranty statement. This statement is overly broad and implies buyer has no legal right to recover damages from manufacturer and is unacceptable under statutory and regulatory standards. We recommend revising it to read "To the fullest extent permitted by law CONTROL SOLUTIONS, INC shall not be liable .... Etc" or "It is CONTROL SOLUTIONS, INC intention that CONTROL SOLUTIONS, INC shall in no event be liable ..... etc".

3. Please submit the California State specific supplemental labeling. That is considered part of the labeling for this product.

4. Please submit two (2) copies of your final printed label for before your release the product for shipment. Please refer to the A-79 enclosure for a further description of final printed labeling. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing amended labeling constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

If you have any questions regarding this action, please contact BeWanda Alexander of my team at (703) 305-7460.

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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 those uses covered by the certified applicator's certification

Bifenthrin Nursery Concentrate

For Commercial Non-Food Use on Indoor and Outdoor Ornamentals, Greenhouses, Nurseries, Turf on Golf Courses and Sod Farms.

Active Ingredient:	**By Wt.**
Bifenthrin*.....	7.9%
Inert Ingredients:	92.1%
Total:	100.0%

*Cis isomers 97% minimum, trans isomers 3% maximum.
Bifenthrin Nursery Concentrate contains ⅔ pound active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN
CAUTION
(See other panels for additional precautionary information)

NOTE: USERS OF THIS PRODUCT IN CALIFORNIA MUT BE IN POSSESSION OF STATE SPECIFIC SUPPLEMENTAL LABELING.

First Aid	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the Poison Control Center 800-222-1222.	
If swallowed: .	• 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 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 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 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 further 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 information Regarding the Use of this product call 281-892-2500.

ACCEPTED
with COMMENTS
In EPA Letter Dated
APR 6 2005
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No.
53883-165

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PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals

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

Personnel Protective Equipment:
Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions or category C on an EPA chemical resistance category selection chart.

Applicators and other handlers (other than mixers and loaders) must wear:
- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride or viton.
- Shoes plus socks

Mixers and Loaders must wear:
- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride or viton.
- Shoes plus socks
- Protective Eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If not 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.
- Remover 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. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

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

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 application. 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.

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 intervals. The requirements in this box only apply to users of this product that are covered by the Worker Protection Standard.

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

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

- Coveralls
- Chemical-resistant gloves, such as barrier laminate or butyl rubber or nitrile rubber or neoprene rubber or polyvinyl chloride or viton.
- 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 Standards 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.

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STORAGE AND DISPOSAL

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

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: Plastic Container: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Returnable/Refillable Sealed Container: Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call 1-800-424-9300 (CHEMTREC).

General Applications Instructions

Bifenthrin Nursery Concentrate formulation mixes readily with water and other aqueous carriers, and controls a wide spectrum of insects and mites on trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in greenhouses and outdoor nurseries, and turf on 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.

Bifenthrin Nursery Concentrate may be tank-mixed with other products, including insect growth regulators. When tank mixing Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate 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.

Maximum rates: Do not apply more than 0.2 lb. ai/acre (40 fl. ozs. of Bifenthrin Nursery Concentrate) in a single application or per year for outdoor applications.

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Resistance: Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state pest management authorities for details.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and suspect that resistance is a reasonable cause, immediately consult your local company representative or pest management advisor for the best alternative method of control for your area.

Bifenthrin Nursery Concentrate Dilution Chart

Applic Volume	Applic Rate	Fluid Ounces* of Bifenthrin Nursery Concentrate Diluted to these Volumes of Finished Spray			
Gallons per Acre	Lbs ai per Acre	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	0.133	3.33	6.67	13.3
150	0.2	0.266	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 fl. oz. = 29.57 ml = 2 tablespoons = 6 teaspoons
Do not use household utensils to measure Bifenthrin Nursery Concentrate.

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 Bifenthrin Nursery Concentrate:

$$\frac{(7.9)(\text{Fl. Oz. of Bifenthrin Nursery Concentrate added to tank})}{(\text{Gallons of finished spray mix})(128)} = \text{Percent Active Ingredient of spray mix}$$

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APPLICATION RECOMMENDATIONS

Ornamentals in Greenhouses, Lath Houses, Shade Houses and Outdoor Nurseries, including Non-Bearing Fruit and Nut Trees

Apply 0.025 to 0.2 lbs ai/A (5 to 40 fl. ozs.) of Bifenthrin Nursery Concentrate. Bifenthrin Nursery Concentrate may be diluted and applied in various volumes of water providing that the maximum label rate (0.2 lbs. ai/A or 40 fl. ozs.) is not exceeded (refer to Dilution Chart for specific instructions). Bifenthrin Nursery Concentrate may be applied through low volume application equipment by dilution with water or other carriers and providing that the maximum label rate (0.2 lbs. ai/A or 40 fl. ozs.) is not exceeded.

ORNAMENTAL APPLICATION RATES

The application rates listed in the following table will provide control of the respective pests under typical conditions. However, at the discretion of the applicator, Bifenthrin Nursery Concentrate may be applied at up to 0.2 lbs. ai/A (40 fl. ozs.) to control each of the pest listed in this Table.

Pest	Application Rate Bifenthrin Nursery Concentrate	
	Lbs Ai/A	Fluid Ounces Per Acre
Aphids Bagworms[1] Cutworms Elm Leaf Beetles Fall Webworms Lace Bugs Leaf Feeding Caterpillars Plant Bugs (Including *Lygus spp.*) Tent Caterpillars	0.025-0.05	5-10
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	0.05-0.1	10-20

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Spiders Thrips Tip Moths Twig Borers[2] Weevils Whiteflies		
Ants Imported Fire Ants** Japanese Beetle (Adult) Leafminers Pecan Leaf Scorch Mite Pine Shoot Beetle (Adults)	0.1-0.2	20-40
[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.		

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.
Do not apply when a temperature inversion exists.
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.

APPLICATION RECOMMENDATIONS
Turf (Golf Courses and Sod Farms)
NOT FOR USE ON SOD FARMS IN THE STATE OF NEW YORK.
Apply Bifenthrin Nursery Concentrate as a surface or sub-surface treatment. Use application volumes of up to 10 gallons per 1000 sq. feet to get uniform coverage when treating dense and or long turf foliage.

For low volume applications, less than 2 gallons/1000 square feet, immediate irrigation of treated area with at least 0.25 inches of water following application to ensure efficacy of sub-surface pests such as, but not limited to, Mole Crickets, is recommended.

TURF (Golf Courses and Sod Farms)
APPLICATION RATES
The application rates listed in the following table will provide control of the respective pests under typical conditions. However, at the discretion of the applicator[a], Bifenthrin Nursery Concentrate may be applied at up to 0.1 lb. ai/A (20 fl. ozs.) to control each of the pests listed in this Table. (0.2 lb ai/A or 40 fl. ozs of Bifenthrin Nursery Concentrate for ants, imported fire ants and mole crickets).
[a]During periods of high pest pressure or for maximum residual control.

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Pest	Active Ingredient lbs. per acre	Application Rate Bifenthrin Nursery Concentrate	
Armyworms[3] Cutworms[3] Sod Webworm[3]	0.05 lbs. ai per acre	10 fl. oz. per acre	0.25 fl. oz. per 1000 sq. ft.
Annual Bluegrass Weevil (Hyperodes) (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 lbs ai per acre	10-20 fl. oz. per acre	0.25-0.5 fl. oz. per 1000 sq. ft
Fleas (Larvae)[11] Imported Fire Ants Japanese Beetle (Adult) Ticks[12]	0.1 lbs. ai per acre	20 fl. oz. per acre	0.5 fl. oz. per 1000 sq. ft.
Ants Imported Fire Ants[14] Mole Crickets	0.2[13] lbs. ai per acre	40[13] fl. oz. per acre	1 fl. oz.[13] per 1000 sq. ft.

In New York State, this product may NOT be applied to any grass or turf area 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 Bifenthrin Nursery Concentrate if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

Comments

[3]**Armyworms, Cutworms, and Sod Webworms:** To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the turf area is being maintained at a mowing height of greater than 1 inch, then higher application rates (Up to 0.1 lb. ai/A or 20 fl. ozs. of Bifenthrin Nursery Concentrate) may be required during periods of high pest pressure.

[4]**Annual Bluegrass Weevil (*Hyperodes)* adults:** Application should be timed to control adult weevils as they leave their overwintering sites and move into turf 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:** Applications should be made 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.

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

[7]**Chinch Bugs:** Chinch Bugs infest the base of turf plants and are often found in the thatch layer. Irrigation of the turf 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 ai/A or 20 fl. ozs. of Bifenthrin Nursery Concentrate) may be required to control populations that contain both nymphs and adults during the middle of the summer.

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

[9]**Mole Cricket adults:** Achieving control of adult mole crickets is difficult because preferred turf areas are subject to continuous invasion during the early spring by this extremely active stage. Applications should be made as late in the day as possible and should be watered 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. Turf 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).

[10]**Mole Cricket nymphs:** Turf 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 application to maintain acceptable control. Applications should be made as late in the day as possible and should be watered 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.

[11]**Flea 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 Bifenthrin Nursery Concentrate at 0.05 lb. ai/A (10 fl. ozs.) for adult flea control, then the larval application rate may be achieved by doubling the application volume.

[12]**Ticks:** 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. A repeat application, seven days after the first, may be necessary to achieve control. Do not allow public use of treated areas during application or until sprays have dried.

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Deer Ticks (*Ixodes sp.)* 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 turf 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.

[13]**Note:** For large infestation of ants, imported fire ants, and mole crickets, a single application of 0.2 lb. ai/A (40 fl. ozs of Bifenthrin Nursery Concentrate) may be applied once per year.

[14]**Imported 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 eliminate existing colonies. If the soil is not moist, then it is important to irrigate before application or use a high volume application. Broadcast treatments should apply 0.2 lb. ai/A (40 fl. ozs. of Bifenthrin Nursery Concentrate). Mounds should be treated by diluting 1 teaspoon of Bifenthrin Nursery Concentrate 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. A four foot diameter circle around the mound should also be treated. 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. ai/A (40 fl. ozs.) of Bifenthrin Nursery Concentrate 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.

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 to nearby water bodies.

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 nozzles that provide 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.

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

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). Bifenthrin Nursery Concentrate is approved and can be used in accordance with the USDA Imported Fire Ant Quarantine Program. Bifenthrin Nursery Concentrate may be applied either soil incorporated, as a topical application, or as a high volume drench treatment.

Soil Incorporation: Incorporate the appropriate volume of Bifenthrin Nursery Concentrate (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.

Recommended Soil Incorporation Rate of Bifenthrin Nursery Concentrate for Control of IFA in Potting Media.

Potting Media Bulk Density (lbs. cubic yard)	Fluid ounces of Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate for potting media with bulk densities not listed.

Topical Application: Mix Bifenthrin Nursery Concentrate 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.

Recommended Topical Drench Application Rate of Bifenthrin Nursery Concentrate for Control of IFA in Potting Media

Potting Media Bulk Density (lbs. cubic yard)	Fluid Ounces of Bifenthrin Nursery Concentrate per 1,000 ounces of water	
	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 Bifenthrin Nursery Concentrate for potting media with bulk densities not listed.

High Volume Drench: Apply Bifenthrin Nursery Concentrate 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 volume of the container. When used in accordance with USDA guidelines, this application will provide a 6 month certification period.

Recommended High Drench Application Rate of Bifenthrin Nursery Concentrate for Control of IFA in Potting Media.

Potting Media Bulk Density (lbs. cubic yard)	Fluid ounces of Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate at the rate of 10 to 40 fl. ozs. (0.05 to 0.2 lb/AI) 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 Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate at the rate of 40 to 80 fluid ounces (0.2 to 0.4 lb AI) 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 Bifenthrin Nursery Concentrate (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 Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate at the rate of 10 to 40 fl. ozs. (0.05 to 0.2 lb. AI) 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 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 Larval Control: To protect treated roots of field grown nursery stock from feeding by root weevil larvae, dilute one gallon of Bifenthrin Nursery Concentrate 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 Bifenthrin Nursery Concentrate at the rate of 10 to 40 fl. ozs (0.05 to 0.2 lb AI) 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 Bifenthrin Nursery Concentrate at the rate of 20 to 40 fl. ozs (0.1 to 0.2 lb AI) 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 Bifenthrin Nursery Concentrate at the rate of 10 to 40 fl. ozs. (0.05 to 0.2 lbs AI) 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.

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WARRANTY STATEMENT

CONTROL SOLUTIONS, INC. warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of CONTROL SOLUTIONS, INC. In no case shall CONTROL SOLUTIONS, INC. be liable for consequential, special, or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. In addition to the foregoing, no purchaser of this product (other than an end user) shall be entitled to any reimbursement for any loss suffered as a result of any suspension or cancellation of the registration for this product by the U.S. Environmental Protection Agency. Except as expressly provided herein, CONTROL SOLUTIONS, INC. makes no warranties, guarantees, or representations of any kind, either expressed or implied, or by usage of trade, statutory or otherwise, with regard to the product sold, including, but not limited to merchantability, fitness for a particular purpose, use or eligibility of the product for any particular trade usage. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall be damages not exceeding the purchase price paid for this product or, at CONTROL SOLUTIONS, INC.'s. election, the replacement of this product.

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EPA Est. No.

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