



HY-END BIFEN S

Only for sale to, use, and storage by commercial applicators.

For use to control Ants (including Imported Fire Ants), Chinch Bugs, Fleas, Mole Crickets, Ticks and other insect pests on lawns in landscaped areas and perimeters around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.

Use areas include but are not limited to: lawns and around flower gardens, flower beds, around/along perimeters & foundations of houses and other structures, around mulch beds, along fence lines, and around decks and decking.

Active Ingredient:

Bifenthrin* 0.2%

Other Ingredient: 99.8%

Total 100.0%

*Cis isomers 97% minimum, trans isomers 3% maximum.

By Wt.

EPA Reg. No. 53883-124-83996

EPA Est. No. 65387-AR-0002

KEEP OUT OF REACH OF CHILDREN

CAUTION

Manufactured for: NaturChem, Inc.

270 Bruner Road
Lexington, SC 29072

Net Weight: 64 oz.

FIRST AID

If on skin or clothing

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact National Pesticide Information Center (800) 858-7378 for emergency medical treatment information.

Note to Physician - This product is a pyrethroid. If large amounts have been ingested, milk cream and other digestible fats and oils may increase absorption and should be avoided.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

Caution

Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. 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 or rinsate.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climatic modification and being grown in interior plantscapes, ornamental gardens or parks, or lawns or grounds.

Do not apply more than 0.2 lb. active ingredient (a.i.) per acre per application on residential use sites (i.e., around private homes, apartment buildings, condominiums, non-agricultural outbuildings, non-commercial greenhouses, pre-schools or day care facilities). May be applied at up to 0.4 lb. a.i. per acre per application on non-residential use sites (i.e., around institutional, public, commercial or industrial buildings; parks; recreational areas or athletic fields).

Do not broadcast apply more than 0.4 lbs. A.I. (200 lbs. of HY-END BIFEN S) per Acre per year.

Not for use on golf courses, sod farms, nurseries, in commercial greenhouses or on grass grown for seed.

Resistance:

When products are used repeatedly for control, some insects are known to build up resistance to products used, but resistance can not be predicted. This product should conform to resistance management strategies established for the use area. Check with your local or state pest management authorities for more information.

This product, or other products with a comparable modes of action, may not provide sufficient control if resistance should develop in your area. A resistant species may be present if poor efficacy can not be linked to extreme weather conditions or improper treatment. Consult pest management advisors for the other methods of control for your area if you believe resistance is factor.

LAWN & PERIMETER APPLICATIONS

Use appropriate application equipment to broadcast HY-END BIFEN S to achieve thorough coverage of the area being treated.

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 PL Granule if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

Application Rates for Lawn and Perimeter

Under normal conditions, the treatment rates stated in the table below will control the pests listed in the table. To control each of the pests listed in this table, HY-END BIFEN S may be applied at up to 0.4 lb AI/A, at the discretion of the applicator. For residential lawn applications, use a maximum of 0.2 lb of active ingredient per acre per application.

Pest	Application Rate HY-END BIFEN S		Active Ingredient lbs. per Acre
Armyworms ¹ , Cutworms ¹ , Sod Webworm ¹	50 lbs. per acre	1.15 lbs. per 1000 sq. ft.	0.1 lbs. AI/A
Annual Bluegrass Weevil (<i>Hyperodes</i>) (Adult) ³ , Billbugs (Adult) ³ , Black Turfgrass Ataenius (Adult) ⁴ , Leafhoppers, Mealybugs	50 – 100 lbs. per acre	1.15-2.3 lbs. per 1000 sq. ft.	0.1-0.2 lbs. AI/A
Ants, Centipedes, Chinch Bugs ⁵ , Fleas (Larvae) ⁶ , Fleas (Adult), Imported Fire Ants(Adult) ⁷ , Imported Fire Ants (Mounds) ⁷ , Millipedes, Mole Cricket (Adult) ⁸ , Mole Cricket (Nymph) ⁹ , Ticks ¹⁰	100-200 lbs. per acre	2.3 - 4.6 lbs. per 1000 sq. ft.	0.2-0.4 lbs. AI/A
Pillbugs Sowbugs European Crane Flies	200 lbs. per acre	4.6 lbs. per 1000 sq. ft.	0.4 lbs. AI/A

1Armyworms, Cutworms, and Sod Webworms: For best results water the treated area with up to 0.1 inches of water to activate (release from the granule) the insecticide.

2Annual Bluegrass Weevil (*Hyperodes*) adults: Treatment of this species should be performed as they travel into grass areas and away from their overwintering sites. Travel usually starts when *Forsythia* is in full bloom and ends when *Cornus florida* (flowering dogwood) is in full bloom. For additional detailed information concerning treatment timing, check with your State Cooperative Extension Service.

3Billbug adults: Treatment of adult billbugs should be made when they are first noticed in April and May. To optimize treatment timing, degree day models have been developed. For detailed information particular to your region, check with your State Cooperative Extension Service. Spring treatments for billbug adults will also offer control of over-wintered chinch bugs in temperate climates.

4Black Turfgrass Ataenius adults: To control the 1st and 2nd generation of Black Turfgrass Ataenius adults, respectively, treatments should take place in May and July. Time the May treatment to match with the full bloom stage of *Vanhoutte spiraea* (*Spiraea vanhoutte*) and horse chestnut (*Aesculus hippocastanum*). Time the July treatment to match with the blooming Rose of Sharon (*Hibiscus syriacus*).

5Chinch Bugs: Commonly found in the thatch layer, Chinch bugs attack the base of grass plants. Directly following treatment, water the treated area with up to 0.25 inches of water to activate (release from the granule) the insecticide. Chinch bugs can be hard pests to control in grasses and to control populations that contain both nymphs and adults during the summer, higher applications rates may be necessary.

6Flea larvae: Immature fleas mature in shaded areas accessible to pets and other animals. To activate (release from the gran-

ule) the insecticide, water the treated areas with up to 0.5 inches of water directly following application.

7Imported Fire ants: The best control will be achieved by using broadcast treatments in combination with mound drenches. It is critical to water before treatment if the soil is dry. Apply up to 0.4 lb AI/A when making broadcast treatments. Treat mounds with a product that is registered with the EPA and properly labeled for control of fire ant mounds or by applying ½ cup of HY-END BIFEN S per mound and then drenching the mound with 1 to 2 gallons of water. To break their apex and permit the insecticide solution to flow inside the ant tunnels, the mounds should be treated with adequate force. 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. The queen will be killed within 24 hours of application. Six months residual activity for control of foraging Imported Fire Ants and newly mated Fly-In Queens will be provided by applying 125 lbs./acre of Bifenthrin PL Granular.

8Mole Cricket adults: Since the preferred grass areas are susceptible to constant invasion in early spring by the active adult stage, it can be hard sustain control of adult mole crickets. It is ideal to treat the areas as late in the day as possible and water directly following application with up to 0.5 inches of water. To ensure maximum contact when soil is dry, it is necessary to irrigate prior to treatment to bring the adult mole crickets closer to the soil surface. To obtain the best possible control of potential nymphal populations, the grass areas preferred by adult mole crickets should be treated at peak hatch stage. (See below).

9Mole Cricket nymphs: Treat grass areas that are preferred by adult mole crickets in the spring just before peak egg hatch. Young nymphs are more vulnerable to insecticidal treatment at this stage because they are close to the soil surface where the insecticide is most concentrated and thereby providing the most efficient control. For larger more damaging nymphal stages later in the year, it may be necessary to use higher application rates more frequent. It is ideal to treat the areas as late in the day as possible and water immediately after application with up to 0.5 inches of water. To ensure maximum contact when soil is dry, it is necessary to irrigate prior to treatment to bring the adult mole crickets closer to the soil surface.

10Ticks (Including ticks that may transmit Lyme Disease and Rocky Mountain Spotted fever): Make application to the entire area where contact with ticks may occur. Do not make spot treatments. Treat the whole area where contact to ticks may occur. When treating areas with dense ground cover or heavy leaf litter use higher application rates. Ticks may be reintroduced from surrounding areas on host animals. Do not allow public use of treated areas during application. **Deer ticks (*Ixodes sp.*)** have a four-stage life cycle spanning 2 years. To control larvae and nymphs that live in the soil and leaf litter, treatments should be made in mid to late-spring. **American dog ticks** invade suburban settings in areas where residences and dwellings are constructed on former fields or wooded areas. These pests normally gather by paths or roadways where they are likely to find a host. To control tick larvae, nymphs and adults, treatments should take place, as needed, from mid spring to early fall.

Perimeter Treatment: Treat the ground area 5 to 10 feet wide around and adjacent to the structure.

Boundary Treatment: Treat mulch areas, soil areas, vegetation areas, ornamental gardens, planter areas, pavement crevices and fence lines.

Appl. Rate: Lbs. per 1000 sq. ft.	Band Width	Pounds of HY-END BIFEN S for Perimeter Applications Linear Distance (Feet) Around Structure							
		100	150	200	250	300	400	500	1000
2.3	5 feet	1.3	1.9	2.5	3.0	3.6	4.8	5.9	11.7
2.3	10 feet	3.0	4.2	5.3	6.5	7.6	9.9	12.2	23.7
3.0	5 feet	1.7	2.5	3.3	3.9	4.7	6.3	7.7	15.2
3.0	10 feet	3.9	5.4	6.9	8.5	9.9	12.9	15.9	30.9
3.5	5 feet	2.0	2.9	3.8	4.5	5.4	7.2	8.9	17.5
3.5	10 feet	4.5	6.3	8.0	9.8	11.4	14.9	18.3	35.5
4.6	5 feet	2.6	3.8	5.0	6.0	7.2	9.6	11.8	23.4
4.6	10 feet	6.0	8.4	10.6	13.0	15.2	19.8	24.4	47.4

Note: The amounts of HY-END BIFEN S listed in the above table are based on the total area being treated. This area is determined by multiplying the linear distance by the band width and then adding to that value the area of a circle whose radius is equal to the band width (to account for the area treated at the four corners of a rectangular structure).

Fire ant mound treatment: Treat using ½ cup of HY-END BIFEN S per mound and then flood the mound with 1 to 2 gallons of water using enough force to allow the insecticide to flow into the ant tunnels. Apply in cool weather (65 to 80° F) or in early morning or late evening hours to achieve the best results. Treat new mounds as they appear. After use with insecticide, food utensils such as teaspoons and measuring cups must not be used for food purposes.

INDUSTRIAL NON-AGRICULTURAL APPLICATIONS

(Including, but not limited to, Industrial Sites, Parks, Ball Fields and Cemeteries)

Broadcast Applications

Broadcast 2.3 to 4.6 lbs. HY-END BIFEN S per 1000 sq. ft. (0.2 to 0.4 lbs. ai/Acre) uniformly to control actively foraging ants (including Imported Fire Ants). For additional rate recommendations see comments section under **Lawn & Perimeter Applications**.

Pad Mounted Electrical Sites

Uniformly apply 1.0 to 1.5 Tablespoons (0.06 to 0.09 lbs.) of HY-END BIFEN S per 4 sq. ft. of mounting pad to decrease or pre-

vent ant mound building activity on electrical pads. If partly or totally filled with soil excavated by resident ants, remove excess soil and level before treating existing transformers.

Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides.

Note: During the cooler months, electrical sites seem to be more attractive to ants. Apply in the Fall or early Spring for best results.

STORAGE AND DISPOSAL

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 close tightly.

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

To confine spill: Cover to prevent dispersal. Place damaged package in a holding container and identify contents.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spilled bait, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for Guidance.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Empty container through use according to label instructions. Offer for recycling, if available. If recycling is not available; then dispose of container in a sanitary landfill or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

WARRANTY STATEMENT

NaturChem 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 NaturChem to the extent allowed by law, NaturChem shall not 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, NaturChem 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 exclu-

sive remedy of any buyer or user of this product for any and all losses, injuries, or damage 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 NaturChem's election, the replacement of this product.