

9198-233

01-25-2011

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

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Ms. Debbie Ziehr
The Andersons Lawn Fertilizer Division, Inc.
d/b/a Free Flow Fertilizer
P.O. Box 119
Maumee, OH 43537

JAN 25 2011

Dear Ms. Ziehr:

Subject: Application for Pesticide Notification (PRN 98-10)
Comply with Agency pyrethroid labeling letter dated June 4, 2009
The Andersons GC BiCarb Insecticide + Fertilizer
EPA Reg. No. 9198-233
Your submission dated May 10, 2010

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated May 10, 2010 for the above product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds the action requested falls within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

Please be reminded that 40 CFR Part 156.140(a)(4) requires that a batch code, lot number, or other code identifying the batch of the pesticide distributed and sold be placed on nonrefillable containers. The code may appear either on the label (and can be added by non-notification/PR Notice 98-10) or durably marked on the container itself.

If you have any questions regarding this letter, please contact Dana Pilitt, PhD of my staff at (703) 305-7071 or via e-mail at pilitt.dana@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Richard Gebken".

Richard Gebken
Product Manager 10
Insecticide Branch
Registration Division (7505P)



United States
Environmental Protection Agency
Washington, DC 20460

<input type="checkbox"/>	Registration
<input checked="" type="checkbox"/>	Amendment
<input type="checkbox"/>	Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 9198-233	2. EPA Product Manager LaRocca	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) The Andersons GC BiCarb Insecticide + Fertilizer	PM# 13	
5. Name and Address of Applicant (Include ZIP Code) The Andersons Lawn Fert. Div. Inc. d/b/a Free Flow Fert. PO Box 119 Maumee, OH 43537 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)
Notification of label change per June 4, 2009, letter from Environmental Protection Agency.

This notification is consistent with the guidance in the June 4, 2009 letter and the requirements of EPA's regulations at 40 CFR part 156. No other changes have been made to the labeling or the Confidential Statement of Formula for this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statements to EPA. I further understand that if the amended label is not consistent with the requirements of 40 CFR part 156, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	If "Yes" Unit Packaging wgt. No. per container		<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted		If "Yes" Package wgt.	No. per container		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On label	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other _____		

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Debbie Ziehr	Title Regulatory Administrator	Telephone No. (Include Area Code) 419-891-6671
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment both under applicable law.		6. Date Application Received (Stamped) RECEIVED ON JUN 16 2010
2. Signature <i>Debbie Ziehr</i>	3. Title Regulatory Administrator	
4. Typed Name Debbie Ziehr	5. Date 5/10/10	



The Andersons, Inc.
P.O. Box 119 • Maumee, Ohio 43537 • 419/893/5050

June 4, 2010

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Document Processing Desk (NOTIF - PYRETHROID)
Office of Pesticide Programs (7504P)
U.S. Environmental Protection Agency
Room S-4900, One Potomac Yard
2777 South Crystal Drive
Arlington, VA 22202-4501

included:

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RE: Environmental Hazard and General Labeling for Pyrethroid Non-Agricultural Outdoor Products Notification

In response to the above referenced notification that we received, enclosed please find our amended labels for the products listed in Attachment 1. Please note that for EPA #9198-164, we cancelled this EPA registration back in January, 2010. For this reason, this label has not been amended.

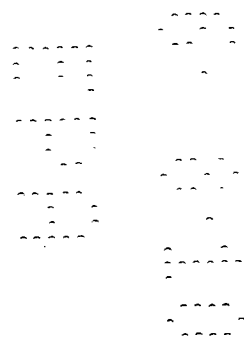
Should you have any additional questions, please do not hesitate to contact me.

Sincerely,

The Andersons Lawn Fertilizer Div., Inc.

Debbie Ziehr
Regulatory Administrator
Phone #419-891-6671
Fax #419-891-2745
Email: debbie_ziehr@andersonsinc.com

Enclosures.



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Front Panel (for internal use only, will not appear on final label)

RESTRICTED USE PESTICIDE

Toxic to Fish and Aquatic Organisms

For retail sale to and use only by certified applicators, or persons under direct supervision and only for those uses covered by the certified applicator's certification.

The Andersons GC BiCarb Insecticide + Fertilizer

For control of selected surface and subsurface pests on any turfgrass site including golf courses and sod farms and control of pests in and around flower beds, ornamental plantings and around buildings.

Optional front panel claims:

- Ideal for Control of Adult Mole Crickets
- Effective for curative treatment of white grubs
- Effective on difficult to control southern chinch bugs
- Patent pending synergistic combination of insecticides
- Broad spectrum combination insecticide
- Contains essential plant nutrients for turf and ornamental maintenance

Active Ingredients

Bifenthrin [†] *	0.058%
Carbaryl (1-naphthyl N-methylcarbamate)	2.300%

Other Ingredients

Total	<u>97.642%</u>
	100.000%

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

†CAS No. 82657-04-6

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

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

Net Weight XX lbs. (XX kg)
Covers Up To XX,XXX Sq. Ft.

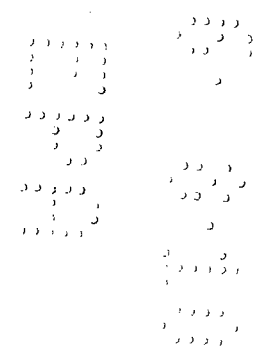
EPA Reg. No. 9198-233

EPA Est. 9198-OH-1M, 9198-OH-2B, 9198-AL-001A

Underlined letter is first letter used in run code on bag

NOTIFICATION

JAN 25 2011



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Back Panel (for internal use only, will not appear on final label)

The Andersons GC BiCarb Insecticide

Net Weight XX lbs. (XX kg)

Covers XX,XXX Sq. Ft.

Guaranteed Analysis

Total Nitrogen (N) XX%

Available Phosphate (P₂O₅) XX%

Soluble Potash (K₂O) XX%

Plant nutrients derived from:

For products being sold into states requiring fertilizer metals information::

Information regarding the contents and levels of metals in this product is available on the internet at

[http://www.regulatory-info-ap.com./](http://www.regulatory-info-ap.com/)

FIRST AID

Carbaryl is an N-Methyl Carbamate Insecticide.

GENERAL: Contact a physician immediately in all cases of suspected poisoning. Transport patient to a physician or hospital immediately and **SHOW A COPY OF THIS LABEL TO THE PHYSICIAN.** If poisoning is suspected in animals, contact a veterinarian.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contacts 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 mouth-to-mouth if possible. Call a poison control center or doctor for treatment advice.

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

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-757-8951 for emergency medical treatment information.

ANTIDOTE STATEMENT: ATROPINE SULFATE IS HIGHLY EFFECTIVE AS AN ANTIDOTE. See NOTE TO PHYSICIAN.

Note to Physician: Carbaryl is an N-methyl carbamate that inhibits cholinesterase. Atropine is antidotal. Do not use 2-PAM (pyridene-2-aldoxime methiodide), opiates or cholinesterase inhibiting drugs. Probable mucosal damage may contraindicate the use of gastric lavage.

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wear protective eyewear. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Wear long sleeved shirt and long pants, socks, shoes and chemical resistant gloves (such as natural rubber). Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Care should be used when applying to avoid fish and reptile pets in/around ornamental ponds. Harmful if inhaled, swallowed, or absorbed through the skin. Avoid breathing dust. Remove contaminated clothing before reuse.

The following Personal Protective Equipment requirements apply to sod farm use only

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

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

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

User Safety Recommendations

Users should:

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

User Safety Requirements: Applicators and other handlers must wear long-sleeved shirt and long pants, and shoes plus socks. Keep and wash PPE separately from other laundry, use detergent and hot water. Wash thoroughly with soap and water after handling this product, and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish, aquatic and estuarine 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 cleaning equipment or when disposing of equipment washwaters or rinsate.~~ 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. Sweeping any product that lands on a driveway, sidewalk, or street, back onto the treated area of the lawn or garden will help to prevent run off of water bodies or drainage systems.

**READ ALL DIRECTIONS PRIOR TO APPLICATION OF THE PRODUCT
DIRECTIONS FOR USE**

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

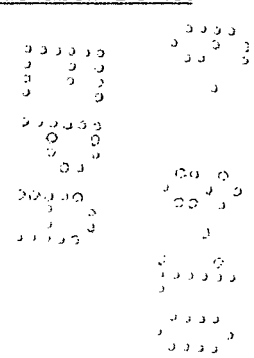
In New York State, the product may NOT be applied to any grass or turf areas within 100 feet of a water body (lake, pond, river, stream, wetland or drainage ditch). In New York State, do make a single repeat application of this product if there are signs of renewed insect activity, but not sooner than two weeks after the first application. Do not apply more than 348 lbs. of this product (0.2 lbs. bifenthrin, 8.0 lbs. carbaryl) per acre per year.

Do not apply by air. Do not apply more than 690 lbs. of this product (0.4 lbs. bifenthrin, 16 lbs. carbaryl) per acre per year. Do not apply within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish farm ponds.

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.

Apply this product directly to the lawn or garden area. Water treated area as directed on this label. Do not water to the point of run-off.

Do not make applications during rain.



AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Workers Protection Standard 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours. PPE required for early entry to treated areas that is permitted under the worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Waterproof gloves
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to use of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The Worker Protection Standard applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. If watering-in of the granules is necessary, do not allow people or pets on treated areas until the grass or soil is dry. Do not touch treated surface until dry.

General Information

This product controls surface and subsurface feeding pests on any turfgrass site (lawns, sod, turf areas) such as, but not limited to: residential and commercial lawns, grounds or lawns around business and office complexes, shopping centers, multi-family and residential apartment complexes, airports, military and other institutions, cemeteries, parks and picnic areas, playgrounds, schools, athletic fields, golf courses and sod farms.

The active ingredients in this product also provide both curative and residual control of listed surface feeding pests.

The regional differences in pest species pressure, timing for optimal control, pest monitoring methods and other particulars for your location will vary, so consult your cooperative extension service for details. Most states have taxpayer-supported internet web sites and other services to provide this very helpful information. Please use and continue to support your local extension services.

Application Directions

Apply uniformly over the treatment area with either a broadcast or drop type spreader, avoiding spreaders which will apply product in narrow, concentrated bands. Apply only the specified amount in the following table. Calibrate the spreader before use and check periodically to ensure the equipment is working properly. Avoid overlaps that will increase rates above those recommended. Failure to follow the Directions for Use and all precautions may result in grass injury or poor pest control.

For optimal effectiveness, minimize thatch since heavy thatch will prevent the insecticide from penetrating to the area where insects are feeding. Although not dependent on immediate irrigation for activation, water must carry this material through the thatch. In conditions of drought it is recommended to water in this product taking care to minimize runoff.

Recent research has shown that well-maintained turf is an effective environmental buffer that prevents pollutants from entering our natural water bodies. To help protect these natural resources, please avoid applying product to sidewalks, driveways, roadways, and other impervious surfaces which are adjacent to storm drains. Sweep any misplaced granules back onto the area you are treating immediately after application, since storm drains often empty directly to nearby waterways.

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Back Panel (for internal use only, will not appear on final label)

Timing

Surface pests (leaf, crown and thatch inhabiting): Treat when pests or turf damage symptoms first appear, or when pests are detected by local site monitoring. Best results will occur if the treated area is thoroughly irrigated with water after application.

Subsurface pests (soil inhabiting): For best preventative treatment, apply 10 days to 2 weeks after egg-laying activity. As a curative treatment, apply when turf damage is first noted. Local site monitoring is recommended to determine optimal time of application. Contact your local State Extension Specialists for more specific information regarding the timing of applications, and for advice on how and when to monitor pest activity at your location. Some pests may have either single or multiple generations per year, depending on species, weather, and locale.

For best results, Irrigate treated areas soon after application, enough to thoroughly wet the underlying soil; this washes the active ingredients down below the turf and thatch, and it encourages the subsurface pests to move upward in the soil profile where they will come in contact with the active ingredients. For best pest control and turf culture, minimize thatch buildup to no more than 0.5 in., using mechanical removal methods as needed.

Do not apply more than 348 lbs. of product per 1,000 sq. ft. (0.2 lb. bifenthrin, 8.0 lb. carbaryl active ingredient per acre) per application on residential use sites (i.e. around private home, apartment buildings, condominiums, non-agricultural outbuildings, non-commercial greenhouses, pre-schools or day care facilities). May be applied up to 690 lbs. of product per 1,000 sq. ft. (0.4 lb. bifenthrin, 16 lb. carbaryl active ingredient per acre) per application on non-residential use sites (i.e. around institutional, public, commercial or industrial buildings; parks; recreational areas or athletic fields).

Application Rates

Pest	Amount of product
Armyworms (larvae of Armyworm, Fall Armyworm, Lawn Armyworm, and striped Grassworm), Cutworms (larvae of Black Cutworm, and Bronze Cutworm), Sod Webworms (larvae of Bluegrass Webworm, Larger Sod Webworm, Western Lawn Moth Cranberry Girdler, Tropical Sod Webworm, and Burrowing Sod Webworm)	87 lb./acre (2 lb./1,000 sq. ft.)
Annual Bluegrass Weevil (<i>Hyperodes</i>) (Adult), Adults of Bluegrass Billbug, Hunting Billbug, Phoenician Billbug and Denver Billbug, Black Turfgrass Ataenius (Adult), Mealybugs, Leafhoppers, Chinch Bugs (nymphs and adults of Hairy Chinch Bug, Southern Chinch Bug, and Buffalograss Chinch bug), Chiggers, Crickets, Darkling Ground Beetles, Earwigs, Essex Skipper, Fire Brats, Grasshoppers, Silverfish, Spittlebugs Springtails	87-174 lb./acre (2 – 4 lb./1,000 sq. ft.)
Ants, Centipedes, Fleas (Adult), Flea (Larvae), Millipedes, Ticks, Deer Ticks, American Dog Ticks, European Crane Fly, Imported Fire Ant (Adults), Mole Cricket (Adult), Mole Crickets (nymphs and adults of Tawny, Southern, Shortwinged, West Indian (Changa), Oriental (formerly African) and Native (northern) Mole crickets)	174 - 348 lb./acre (4 – 8 lb./1,000 sq. ft.)
White Grubs (larvae of Japanese Beetle, European Chafer, Northern Masked Chafer, Southern Masked Chafer, Oriental Beetle, Asiatic Garden Beetle, May/June beetle (<i>Phyllophaga</i> spp.), Bluegrass billbug, Hunting Billbug, Phoenician Billbug, Denver (Rocky Mountain) Billbug, Green June beetle, Black Turfgrass ataenius, and Aphodius) and Annual Bluegrass weevil (<i>Hyperodes</i> weevil) and European Crane fly larvae,	preventative: 87-174 lb./acre (2 – 4 lb /1,000 sq. ft.) curative: 174 - 348 lb./acre (4-8 lb /1,000 sq. ft.)
Pillbugs (Sowbugs)	343 lb./acre (8 lb./1,000 sq. ft.)

Armyworms, Cutworms, Sod Webworms: Apply when monitoring or damage symptoms for the larval stages of these pests warrant. For best results, the treated area should be irrigated immediately after application with up to 0.1 inches of water to activate the insecticide.

Annual Bluegrass Weevil (*Hyperodes*) (Adult): Treatment should be made to control the adult weevils as they migrate from their overwintering sites such as roughs and debris under ornamental plantings, shrubs and trees, especially White Pines, and move into grass areas. This movement generally begins when Forsythias bloom and ends when flowering dogwoods are in bloom. There are often two generations in New York. Contact your State Cooperative Extension Service for more specific information.

Billbugs

(Adult/preventative): In temperate regions, apply when adult billbugs are first observed during April and May. These spring applications targeting billbug adults will also provide control of over-wintered chinch bugs. When possible, controlling the mobile adult stage helps prevent turf damage later in the year from the larvae. Consult your State Cooperative Extension Service for information on degree days, monitoring, and timing in your region.

(Larvae/curative): This damaging stage may be found in cool season or temperate areas from May into October. The Hunting and Denver species overwinter as larvae, and Hunting Billbugs breed continuously in the Deep South. While most Billbugs in cool season areas typically have one generation per year, due to multiple generations in warmer regions, and extended egg-laying periods throughout their ranges, apply when damage from this stage is noticed. Irrigate thoroughly after application, enough to wet the underlying soil, for best results.

Black Turfgrass Ataenius (Adult): Apply treatments during May and July to control both generations of adults. The May application should be made at the same time as the full bloom stage of Vanhoutte spiraea (*Spirea vanhouttei*) and Horse chestnut (buckeye tree) (*Aesculus hippocastanum*). The July application should coincide with the blooming of Rose of Sharon (*Hibiscus syriacus*).

Chinch Bugs: These pests infest the base of the plant and are usually found in the thatch layer. All three stages, eggs, nymphs and adults, are may be present at the same time in late season temperate and southern locations. Treat when monitoring or damage indicates the presence of populations above damage thresholds. Watering the treated area with up 0.25 inches immediately after application will result in quicker control. Higher application rates may be required to control both nymphs and adults during the summer or in warm season turf areas, and to provide extended residual control

Flea Larvae: These larvae develop in the soil and shady areas. Irrigate the treated area with up to 0.5 inches of water immediately after application.

Imported Fire Ants: The best control will be reached by a combination of broadcast applications and mound drenching. If soil is not moist, then it is important to irrigate before application. Apply 4-8 lbs per 1,000 sq. ft. to control foraging fire ants, high rates provide longer residual control. Use Andersons Golf Course Prosect for mound drench treatments

Mole Crickets

Adults: Achieving acceptable control of adult mole crickets may be difficult because preferred grass areas are subject to continuous invasion 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. Use Andersons Golf Course Fertibait with bifenthrin for Mole Crickets for excellent control of the active adult stage of this pest.

Nymphs: Grass areas that received intense adult mole cricket pressure in the spring should be treated immediately before 1-2 weeks past 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. 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 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.

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Ticks: Do not make spot applications. Treat the entire area where ticks may occur. The higher application rate might be needed if heavy leaf litter or dense ground cover exists. Retreatment might also be necessary due to animals reintroducing new populations. Do not allow public use of treated areas during application.

Deer Ticks: These ticks have a life cycle that ranges over a two year period and involves four life stages. Treatments should be applied in mid- to late-spring to control larvae and nymphs that are present on the soil and leaf litter.

American Dog Ticks: These ticks tend to gather along paths or roadways where humans are likely to be found. Treatments should be made from mid-spring to early fall to control larvae, nymphs and adults.

White grubs: Preventative applications are made 10 days to 2 weeks following peak adult flight activity as determined by local site monitoring, or as recommended by local cooperative extension agents. Curative applications should be made when grubs are feeding near the soil surface, usually during late March through May or July to early September, when damage symptoms first become evident, or as recommended by extension. See the Comprehensive Turf Insect Control section below for more information on controlling grubs as well as surface pests. For best results, irrigate treated areas soon after application, enough to thoroughly wet the underlying soil. Use higher rates in areas of heavy pressure and where thatch is present in excess of 0.5 in. thickness. Reduce thatch by mechanical means for best turf quality and better control of grub species..

European Crane Fly: Adults emerge from the soil to lay eggs from late August to mid-September. In areas with historic problems, an October treatment can be used to control this pest at this early, most vulnerable larval stage, which will avoid damage the following year. Otherwise, monitor turf areas in winter and early spring when there is a consistent warmer period, treating when the larvae are present. Discontinue monitoring and control measures in early May, when these pests pupate and stop feeding.

Comprehensive Turf Insect Control

The "multiple target principle" of insect control utilizes strategically timed applications to manage multiple insect pests with minimal pesticide applications. For example, this product may be used as a curative application for white grubs in early August for cool season turf areas to control most white grub species. As the white grub life cycle chart for the **cool season turf regions** below illustrates, application timing in the indicated bracket area will control many of the grub species when they are at their most vulnerable, soon after egg hatch when grubs are small. During this period, adequate grub control can be obtained at 4 pounds per 1,000 sq. ft. in all but the most extreme situations (heavy thatch, heavy pressure), and the economical 2 pounds per 1,000 sq. ft. can handle most situations, especially when used in conjunction with early applications (see below).

Chart: optimal cool season white grub application timing

In addition, early applications to control surface pests in mid-April too early or mid-May will also help control white grubs which have moved up as the soil warms into the surface soil, just below the grass and thatch. This application timing will reduce grub pressure from the over wintered grub generation, and can manage populations of turf surface pests as well.

Regional Timing for Comprehensive Turf Pest Control; general recommendations

Northeast and Midwestern states (bounded by the Dakotas, Nebraska, Kansas, Missouri, Kentucky West Virginia and Maryland), apply mid-April to mid-May (early May for Chafers, see chart) as needed for surface pests and over wintered grubs before they pupate, then in late July through late August for newly hatched grubs and other late season pests.

Southern States (bounded by New Mexico, Oklahoma, Arkansas, Tennessee and Virginia), apply in April and July, using the higher rates for best results. Additional applications may be required where pest activity persists year-round.

Western States (bounded by Montana, Wyoming, Colorado and Arizona), apply in May and July. Applications in October through warm spells in winter and/or Spring may be needed for European Crane Fly control in the PNW, see detailed instructions above.

