

## Insect Control for Home Lawns

PEST	INSECTICIDE	AMOUNT/1000 SQ. FT. (or as noted)	REMARKS, PRECAUTIONS
<p><b>IMPORTED FIRE ANTS</b> Around residences, try</p> <p><b>Program 1, Two Step method:</b></p> <p>1. Broadcast one of the baits first. IGR baits are distributed well because they don't affect the worker.</p> <p>2. 7-10 days later, apply a drench, dust, fast-acting bait (hydramethylnon, indoxacarb, abamectin, or spinosad), granules, dust or drench to the individual mounds that are likely to be encountered by people. See SP419, <a href="http://fireant.utk.edu">http://fireant.utk.edu</a> or <a href="http://extension.org/fire+ants">extension.org/fire+ants</a> for more fire ant control strategies.</p> <p>Contact your local county Extension agent or TDA if fire ants are located in regions of the state where they have not been seen before. Fire ants are in all (A) or part (P) of the following counties as of 2013: Anderson (A), Bedford (A), Benton (A), Bledsoe (A), Blount (A), Bradley (A), Cannon (P), Carroll (A), Chester (A), Coffee (A), Crockett (A), Cumberland (P), Davidson (P), Decatur (A), Dickson (P), Fayette (A), Franklin (A), Gibson (P), Giles (A), Grundy (A), Hamilton (A), Hardeman (A), Hardin (A), Haywood (A), Henderson (A), Hickman (A), Humphreys (P), Knox (A), Lauderdale (P), Lawrence (A), Lewis (A), Lincoln (A), Loudon (A), Madison (A), Marion (A), Marshall (A), Maury (A), McMinn (A), McNairy (A), Meigs (A), Monroe (A), Moore (A), Morgan (P), Perry (A), Polk (A), Rhea (A), Roane (A), Rutherford (A), Sequatchie (A), Sevier (P), Shelby (A), Tipton (A), Van Buren (A), Warren (A), Wayne (A), White (A), Williamson (A), Wilson (P).</p> <p>For details on quarantine lines and other info, see <a href="http://fireants.utk.edu">http://fireants.utk.edu</a> or TDA's web site at: <a href="http://tennessee.gov/agriculture/regulatory/plants.html">http://tennessee.gov/agriculture/regulatory/plants.html</a></p>	<p><b>BAITS</b> Award bait (IGR) 1% fenoxycarb For use by professionals</p>	broadcast 1-1.5 lb/acre or 1-3 Tbsp. around the mound	<p><b>Use fresh bait.</b> Most available fire ant baits use soybean oil as a feeding attractant. Baits that are old (over 2 years old in an air-tight container), left in unsealed bags, or stored at high temperatures may become rancid and will not be fed upon by foraging workers.</p> <p><b>Keep baits dry.</b> Wet baits are not attractive to fire ants. Apply baits when the grass and ground are dry or drying, and rain is not expected, preferably for the next 24 hours.</p> <p><b>Apply baits when fire ants are actively foraging.</b> Foraging activity can be determined by spreading bait in a small pile in the area to be treated. If fire ants are actively foraging, you should see ants removing the bait within 10 to 30 minutes. This also will indicate that the bait is attractive, and not too old. Fire ants generally will forage when air temperatures are between 70 and 90F. During hot, summer weather, apply baits in the late afternoon or evening because fire ants will forage at night under these conditions.</p> <p><b>Broadcast the bait, or apply it as directed 2-4 ft. around, NOT ON, the mound.</b></p> <p><b>Avoid disturbing the ants right before applying the bait.</b></p> <p><b>Do not contaminate baits with fertilizer or other pesticides.</b></p>
	Distance bait (IGR) 0.5% 2-[1-Methyl-2(4-phenoxyphenoxy)ethoxy]pyridine	broadcast 1-1.5 lb/acre or 1-4 Tbsp. around the mound	
	Extinguish™ bait (IGR) 0.5% methoprene	broadcast 1-1.5 lb/acre or 3-5 Tbsp. around the mound (& labeled for pasture, cropland)	
	PT Ascend Fire Ant Bait Formula 1 0.011% abamectin	broadcast 0.4 oz/1000 sq.ft. or 5-7 Tbsp. around the mound	
	Spectracide Fire Ant Killer Plus Preventer Bait Once & Done 0.016% indoxacarb	broadcast 0.5 lb/1000sqft or 4 Tbsp. around the mound	
	Advion Fire Ant Bait 0.045% indoxacarb	broadcast 1.5 lb/acre or 0.5 oz/1000 sq. ft. or 4 Tbsp. around the mound; up to 4 app/yr.	
	Garden Tech Over n' Out Fire Ant Mound Treatment (blue jug) 0.008% indoxacarb	4 Tbsp. around the mound (Mound treatment only)	
	Amdro® Fire Ant Bait 0.73% hydramethylnon	broadcast 1-2 lb/acre or 2- 5 level Tbsp. around the mound	
	Other hydramethylnon fire ant baits include ProBait, AmdroPro, etc.	See labels for other hydramethylnon baits.	
	Extinguish Plus (IGR & Other) 0.37% hydramethylnon 0.25% s-methoprene	broadcast 1-1.5 lb/acre or 3-5 Tbsp. around the mound (& labeled for pasture)	
spinosad baits, such as Green Light, Ferti-Lome, Garden Safe, and Southern Ag Payback. Spinosyns are produced by a soil microorganism (Saccharopolyspora spinosa).	See label. Usually 4 Tbs around the mound		

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<p><b>IMPORTED FIRE ANTS CONT'D</b></p> <p><b>Program 2.</b> Small areas where less than 20 - 30 mounds per acre. Apply individual mound (drench, dust or granular) treatments as needed.</p> <p>See the following web sites for more fire ant management info:</p> <p><a href="http://fireants.utk.edu">http://fireants.utk.edu</a></p> <p><a href="http://www.extension.org/fire+ants">http://www.extension.org/fire+ants</a></p>	<p><b>DRENCHES</b></p>	<p>See label</p>	<p>For a list of many products available to treat fire ants in see <a href="http://fireants.utk.edu/resources/updates.html">http://fireants.utk.edu/resources/updates.html</a> .</p> <p>For a list of Alabama products by price and application type (broadcast vs. individual mound treatment) see <a href="http://www.aces.edu/pubs/docs/A/ANR-0175-A/ANR-0175-A.pdf">http://www.aces.edu/pubs/docs/A/ANR-0175-A/ANR-0175-A.pdf</a></p>
	<p><b>DUSTS</b></p>	<p>See label</p>	
	<p><b>GRANULES</b></p>	<p>See label</p>	
<p><b>Program 3.</b> Ant Elimination Method.</p> <ol style="list-style-type: none"> <li>1. Broadcast a bait (optional)</li> <li>2. Broadcast a contact insecticide (granule or liquid) to lawn when fire ant activity noted.</li> </ol>			<p>For a list of many products available to treat fire ants in Tennessee see <a href="http://fireants.utk.edu/resources/updates.html">http://fireants.utk.edu/resources/updates.html</a>.</p>



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<b>ARMYWORMS AND CUTWORMS</b>	Bayer Advanced Complete Insect Killer for Soil and Turf ready-to-spray imidacloprid 0.72% β-cyfluthrin 0.36%	dilutes automatically, see label	See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a> Imidacloprid for early instar white grubs and β-cyfluthrin for above ground pests such as armyworms, cutworms, sod webworms, etc.
	Bayer Advanced Complete Insect Killer for Soil and Turf ready-to-spread granules imidacloprid 0.15% β-cyfluthrin 0.05%	2 to 3 lbs.	See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a>  Imidacloprid for early instar white grubs and β-cyfluthrin for above ground pests such as armyworms, cutworms, sod webworms, etc.
	Spectracide Acre Plus Triazide Insect Killer Once & Done! Concentrate gamma-cyhalothrin 0.25%	dilutes automatically, see label	See label at <a href="http://www.spectracide.com/Customer-Help/Labels-and-MSDS.aspx">http://www.spectracide.com/Customer-Help/Labels-and-MSDS.aspx</a>
	Ortho Bug-B- Gon Max Lawn & Garden Insect Killer1 RTS Concentrate bifenthrin 0.3%	1.5-3 Tbsp. per gallon of water per 125 sq. ft.	See <a href="#">label</a>
	Bayer Advanced Power Force Multi-Insect Killer Concentrate cyfluthrin 0.75%	½ fl. oz. per gallon or see label for hose-end sprayers	See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a>
	Bayer Advanced PowerForce Multi-insect Killer Ready-to-Spread Granules β-cyfluthrin 0.05%G	2-3 lbs.	See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a>
	Monterey Garden Insect Spray spinosad 0.5%	2 oz. per gallon	for armyworms only  Mix and apply a minimum of 3 gal. of spray per 1,000 sq. ft. Delay watering or mowing for 24 hr. after application. For best results apply in early morning or late afternoon.  See label at <a href="http://www.montereylawngarden.com/products/insects/">http://www.montereylawngarden.com/products/insects/</a>
	Spectracide Triazide Insect Killer Once & Done! Granules gamma-cyhalothrin 0.05% G	0.8 lb	Apply with a fertilizer spreader. Apply when grass is dry. Water lawn lightly immediately after application.  See label at <a href="http://www.spectracide.com/Customer-Help/Labels-and-MSDS.aspx">http://www.spectracide.com/Customer-Help/Labels-and-MSDS.aspx</a>
	GrubEx <sub>1</sub> chlorantraniliprole 0.08%	2.9 lbs.	Apply spring to late summer to dry lawn with a spreader and lightly water to activate.  See label at <a href="http://www.kellysolutions.com/erevals/documentsubmit/KellyData/OK/pesticide/Product%20Label/538/538-306/538-306_GrubEx_1_7_6_2009_9_50_4_2_AM.pdf">http://www.kellysolutions.com/erevals/documentsubmit/KellyData/OK/pesticide/Product%20Label/538/538-306/538-306_GrubEx_1_7_6_2009_9_50_4_2_AM.pdf</a>

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<b>BEES, WASPS, CICADA KILLERS, YELLOWJACKETS</b> See SP341M	Bee/Wasp Killer Aerosols  Apicide Carbaryl 5% D  Bonide Termite and Carpenter Ant Dust deltamethrin 0.05% D		Apply spray directly into nest entrance at dusk when wasps are less active. Repeat at 2-3 day intervals if activity in nest continues. See label at <a href="http://www.mysticchemical.com/images/labels/Apicide_Label.pdf">http://www.mysticchemical.com/images/labels/Apicide_Label.pdf</a>  See label at <a href="http://www.bonideproducts.com/retail_support/labels/index.php">http://www.bonideproducts.com/retail_support/labels/index.php</a>
<b>GREEN JUNE BEETLES</b> (Grubs Only)	GardenTech Sevin Lawn Insect Granules carbaryl 2% G	2.25 lbs.	See label at <a href="http://www.gardentech.com">http://www.gardentech.com</a>
	GrubEx <sub>1</sub> chlorantraniliprole 0.08%G	2.9 lbs.	Apply spring to late summer to dry lawn with a spreader and lightly water to activate. <a href="http://www.kellysolutions.com/ere news/documentssubmit/KellyData/OK/pesticide/Product%20Label/538/538-306/538-306_GrubEx_1_7_6_2009_9_50_42_AM.pdf">http://www.kellysolutions.com/ere news/documentssubmit/KellyData/OK/pesticide/Product%20Label/538/538-306/538-306_GrubEx_1_7_6_2009_9_50_42_AM.pdf</a>
	Maxide Dual Action Insect Killer Concentrate Thiamethoxam 0.4% Lambda-cyhalothrin 0.16%	4 – 8 fl. Oz	Apply when insects are present. <a href="http://www.kellysolutions.com/ere news/documentssubmit/KellyData%5COK%5Cpesticide%5CProduct%20Label%5C85579%5C100-1334-85579%5C100-1334-85579_Maxide_Dual_Action_Insect_Killer_Concentrate_12_14_2009_2_46_45_PM.pdf">http://www.kellysolutions.com/ere news/documentssubmit/KellyData%5COK%5Cpesticide%5CProduct%20Label%5C85579%5C100-1334-85579%5C100-1334-85579_Maxide_Dual_Action_Insect_Killer_Concentrate_12_14_2009_2_46_45_PM.pdf</a>
<b>WHITE GRUBS of MAY BEETLES, CHAFERS, JAPANESE BEETLE, GREEN JUNE BEETLES, ETC.</b>	Bayer Advanced 24-Hour Grub Killer Plus <sup>1</sup> Ready-To-Spread Granules trichlorfon 6.2 % G	3 lbs.	Treat lawn early to mid-August. When grubs are present. Water grass thoroughly after application. See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a>
	GrubEx imidacloprid 0.2% G	2.87 lbs.	Apply once, anytime from mid-June through mid-July. <a href="http://www.kellysolutions.com/ere news/documentssubmit/KELLYDATA%5COK%5CPESTICIDE%5CPRODUCT%20LABEL%5C538%5C432-1339-538%5C432-1339-538_GRUBEX_1_25_2005_5_24_53_PMSecured.Pdf">http://www.kellysolutions.com/ere news/documentssubmit/KELLYDATA%5COK%5CPESTICIDE%5CPRODUCT%20LABEL%5C538%5C432-1339-538%5C432-1339-538_GRUBEX_1_25_2005_5_24_53_PMSecured.Pdf</a>
	Bayer Advanced Lawn Season Long Grub Control ready-to-spray imidacloprid 1.47%	dilutes automatically, see label	You may spray this product over soil or mulch. Remove weed barrier before applying. See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a>
	Bayer Advanced Complete Insect Killer for Soil and Turf ready-to-spray imidacloprid 0.72% β-cyfluthrin 0.36%	dilutes automatically, see label	see label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a> Imidacloprid should control early instar white grubs and beta-cyfluthrin should control above ground pests such as armyworms, cutworms, sod webworms, etc.
	GrubEx <sub>1</sub> chlorantraniliprole 0.08%	2.9 lbs.	Apply spring to late summer to dry lawn with a spreader and lightly water to activate. <a href="http://www.kellysolutions.com/ere news/documentssubmit/KellyData/OK/pesticide/Product%20Label/538/538-306/538-306_GrubEx_1_7_6_2009_9_50_42_AM.pdf">http://www.kellysolutions.com/ere news/documentssubmit/KellyData/OK/pesticide/Product%20Label/538/538-306/538-306_GrubEx_1_7_6_2009_9_50_42_AM.pdf</a>

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<b>MILLIPEDES, SOWBUGS, PILLBUGS</b>	GardenTech Sevin Bug Killer Concentrate carbaryl 22.5%EC	3 to 6 oz per gallon	<a href="http://www.gardentech.com">http://www.gardentech.com</a>  Dethatch lawn, remove boards, debris and dead plant material.
	Spectracide Triazide Insect Killer Once & Done! Granules gamma-cyhalothrin 0.05% G	0.8 lb	See label at <a href="http://www.spectracide.com/Custom-Help/Labels-and-MSDS.aspx">http://www.spectracide.com/Custom-Help/Labels-and-MSDS.aspx</a>
<b>SOD WEBWORMS</b>	Bayer Advanced Complete Insect Killer for Soil and Turf ready-to-spray imidacloprid 0.72% β-cyfluthrin 0.36%	dilutes automatically, see label	See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a> Imidacloprid should control early instar white grubs and β-cyfluthrin should control above ground pests such as armyworms, cutworms, sod webworms, etc.
	Bayer Advanced Complete Insect Killer for Soil and Turf ready-to-spread granules imidacloprid 0.15% β-cyfluthrin 0.05%	2 to 3 lbs.	See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a> Imidacloprid should control early instar white grubs and β-cyfluthrin should control above ground pests such as armyworms, cutworms, sod webworms, etc.
	Bayer Advanced PowerForce Multi-insect Killer Concentrate cyfluthrin 0.75%	3 fl. oz./gallon per 500 sq. ft.	See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a>
	Spectracide Acre Plus Triazide Insect Killer Once & Done! Insect Killer Concentrate gamma-cyhalothrin 0.25%	Dilutes automatically	Thoroughly wet grass before applying. Delay additional watering or mowing for 24 hours.  <a href="http://www.spectracide.com/Custom-Help/Labels-and-MSDS.aspx">http://www.spectracide.com/Custom-Help/Labels-and-MSDS.aspx</a>
	Monterey Garden Insect Spray spinosad 0.5%	2 oz. per gallon	Mix and apply a minimum of 3 gal. of spray per 1,000 sq. ft. Delay watering or mowing for 24 hr. after application.  <a href="http://www.montereylawnngarden.com/products/insects/">http://www.montereylawnngarden.com/products/insects/</a>
	GrubEx <sub>1</sub> chlorantraniliprole 0.08%	2.9 lbs.	Apply spring to late summer to dry lawn with a spreader and lightly water to activate.  <a href="http://www.kellysolutions.com/erenevals/documentssubmit/KellyData/OK/pesticide/Product%20Label/538/538-306/538-306_GrubEx_1_7_6_2009_9_50_4_2_AM.pdf">http://www.kellysolutions.com/erenevals/documentssubmit/KellyData/OK/pesticide/Product%20Label/538/538-306/538-306_GrubEx_1_7_6_2009_9_50_4_2_AM.pdf</a>
	Bayer Advanced 24-Hour Grub Killer Plus Ready-To-Spread Granules trichlorfon 6.2% G	2 lbs.	See label at <a href="http://www.bayeradvanced.com">http://www.bayeradvanced.com</a>



Remove thatch prior to treatment to reduce pest harborage sites, and to allow insecticide and water to reach the soil.

## Sampling and Economic Thresholds for Turfgrass Insect Pests

**White grubs** -Sample several square foot sections of turf by using a shovel or spade to cut out a square foot section and lift the turf back to count grubs. Treatment should be made if white grubs have reached the economic threshold. See above and <http://eppserver.ag.utk.edu/redbook/pdf/commturfingsects.pdf> for treatment times.

### Threshold Targets for White Grubs

#### Assuming Adequate Growing Conditions & No Digging Animals

Annual White Grubs 5-10 grubs/square foot  
(Japanese Beetle, Oriental Beetle, European Chafer, Asiatic Garden Beetle)

Masked Chafer (Annual White Grub) 15-20 grubs/square foot

Black Turfgrass Ataenius 30-50 grubs/square foot

May/June Beetles 3-8 grubs/square foot

Green June beetle grubs 6-8 grubs/square foot

Adapted from D.J. Shetlar (1995) and D.A. Potter (1982) in Hale (2012) Commercial Turfgrass Insect Control  
<http://eppserver.ag.utk.edu/redbook/pdf/commturfingsects.pdf>

**Sod webworms** -- These caterpillars feed on the blades of grass. The light colored caterpillars with dark spots make silk tunnels in the grass. Check for sod webworms and cutworms by preparing a soap solution of 2 teaspoons of liquid dishwashing detergent in a gallon of water. Pour this solution over a 2 ft. by 2 ft. (4 ft<sup>2</sup>) area. Treat when 4 to 6 or more sod webworms per 4 ft<sup>2</sup> are found.

**Cutworms** -- These dark, dingy colored caterpillars feed at night and hide in the ground in the daylight. They clip off the blades of grass at the crown. Treat when one or more cutworms per 4 ft<sup>2</sup> are found.

#### References:

Potter, D.A. 1982. Influence of feeding by grubs of the southern masked chafer on quality and yield of Kentucky bluegrass. J. Econ. Entomol. 75: 21-24.  
Shetlar, D.J. 1995. Lawns and Turf/North. pp. 316-317. In R. Foster, E. Knake, R.H. McCarty, & J.J. Mortvedt [eds.], 1995 Insect Control Guide. Meister Publishing Co., Willoughby, Ohio.

#### PRECAUTIONARY STATEMENT

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store, or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

#### DISCLAIMER STATEMENT

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label takes precedence over the recommendations found in this publication. Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others which may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. The author(s), The University of Tennessee, The Institute of Agriculture and the University of Tennessee Extension assume no liability resulting from the use of these recommendations.

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