



IPM-1313

Commercial Turf and Lawns



Insect Control Recommendations for 2018

These recommendations include products by active ingredients and labeled use rates for the primary pests of turfgrass. Before using an insecticide, it is important to properly identify the pest. Alabama Extension has information describing the identification, biology, and management of many of the important pests of turfgrass. If an insecticide is needed, read the labeled instructions even if you have previously used the product. There have been changes in insecticide labeling recently, especially related to location and timing.

Some products may contain the same active ingredient and have similar trade names but may not be suitable for all turf uses (lawns, athletic fields, golf courses, sod farms). For example, some products may be specifically labeled for use in lawns but not for golf courses or sod farms, and vice versa. Some products are used by professional pest control (PCO) technicians mainly for household or structural pests and may also be labeled for certain pests in home lawns. If specific uses

are prohibited on the label, they should appear in the comments section. It is important to purchase a product that is specifically labeled for the correct and intended site. The label may also have specific instructions on pre- or postirrigation that are required for successful control of certain pests.

These recommendations do not attempt to cover all application conditions. However, failure to follow these instructions may lead to application failures.

Finally, the Environmental Hazards section of the label may have further restrictions on application locations, conditions, or amount of product allowed to be applied per year. Many of these are in place to protect fish, aquatic invertebrates, or beneficial insects such as bees. Often a product may be **RESTRICTED USE** for environmental concerns. Restricted use products may only be purchased and used by licensed pesticide applicators.

Commercial Turf Insect Control

Insecticide and Formulation	Rate	Comments
BILLBUGS		
bifenthrin		
BASELINE 23.4% LIQUID	0.07–0.15 fl.oz./1000 sq.ft.	For use outdoors on home lawns, grounds, and ornamental gardens and parks. Not for use on sod farms or golf courses.
MENACE GC 7.9% LIQUID	0.25–0.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. Use against adults.
ONYX 23.4% LIQUID	0.07–0.15 fl.oz./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms.
TALSTAR 7.9% P	0.25–0.5 fl.oz./1000 sq.ft.	For use on lawns. Apply when adult billbugs are first observed.
TALSTAR PL 0.2% GRANULAR	1.15–2.3 lb./1000 sq.ft. or 50–100 lb./A	For use on lawns in landscaped areas and perimeters around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Not for use on golf courses and sod farms. Apply when adult billbugs are first observed.
TALSTAR SELECT	0.25–0.5 fl.oz./1000 sq.ft. or 10–20 fl.oz./acre	For use on sod farms and golf courses. Apply when adults are first observed.
WISDOM LAWN GRANULAR	1.15–2.3 lb./1000 sq.ft.	Not for use on golf courses or sod farms. Target the adults.
bifenthrin + zeta-cypermethrin		
TALSTAR XTRA 0.20% + 0.05% GRANULAR	1.15–2.3 lb./1000 sq.ft. or 50–100 lb./A	For use on lawns and landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Apply when adults are first observed.
TALSTAR XTRA FEATURING VERGE GRANULAR TECHNOLOGY	1.5–2.3 lb./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms or golf courses.
TALSTAR XTRA GC	1.15–2.3 lbs./1000 sq.ft.	RESTRICTED USE insecticide.

Commercial Turf Insect Control (cont.)		
Insecticide and Formulation	Rate	Comments
BILLBUGS (cont.)		
bifenthrin + zeta-cypermethrin +imidacloprid		
TRIPLE CROWN GOLF	0.23–0.46 fl.oz./1000 sq.ft. or 10–20 fl.oz./acre	For use on golf courses. Apply when adults are first observed. RESTRICTED USE insecticide.
TRIPLE CROWN T&O	0.23–0.46 fl.oz./1000 sq.ft. or 10–20 fl.oz./acre	For use on lawns and landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Apply when adults are first observed.
carbaryl		
SEVIN SL	6 fl.oz./1000 sq.ft. or 8 qt./A	Irrigate turfgrass soon after treatment. For use on golf turf, sports fields, domestic and commercial lawns, cemeteries, parks, campsites, and recreational areas.
chlorantraniliprole		
ACELEPRYN	8–20 fl.oz./A	For use on sod farms, golf courses, landscape and recreational turfgrass.
ACELEPRYN GRANULAR	50–100 lb./A	For use on sod farms, golf courses, landscape and recreational turfgrass.
chlorpyrifos		
CHLORPYRIFOS SPC 4	0.75–3 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For turf around industrial buildings and golf courses only. Apply for control of adults when they first appear.
DURSBAN 50W	2–4 lb./A	Dursban is a RESTRICTED USE insecticide. Use on sod farms only. Apply when adults are first observed.
HATCHET	0.75–1.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. Apply for control of adults when they first appear.
clothianidin		
ARENA 50 WDG	6.4–12.8 oz./A	For use on grass grown in industrial, commercial, and residential landscapes including athletic fields, cemeteries, sod farms, golf courses, home lawns, parks, and playgrounds. Irrigate after application.
ARENA 0.25G	80–160 lb./A	
clothianidin + bifenthrin		
ALOFT GC G	1.8–3.6 lb./1000 sq.ft.	RESTRICTED USE insecticide. Can be used to control adults and larvae.
ALOFT LC SC	0.27–0.54 fl.oz./1000 sq.ft.	Can be used to control adults and larvae.
cyantraniliprole		
FERENCE	0.184–0.367 fl.oz./1000 sq.ft. or 8–16 fl.oz./acre	For use on landscape and recreational turfgrass including golf courses and sod farms.
cyfluthrin		
TEMPO GC ULTRA	8 fl.oz./1000 sq.ft.	Apply for control of adults when they first appear. For use on landscape turfgrass and golf courses but not sod farms.
TEMPO SC ULTRA	8 fl.oz./1000 sq.ft.	Apply for control of adults when they first appear. For use on landscape turfgrass but not golf courses or sod farms.
deltamethrin		
DELTAGARD 0.1% G	2–3 lb./1000 sq.ft. or 87–131 lb./A	Not for use on golf courses or sod farms.
DELTAGARD GC 0.1% GRANULAR	2–3 lb./1000 sq.ft. or 87–131 lb./A	DeltaGard GC is a RESTRICTED USE pesticide. For use on golf courses and sod farms only. Irrigate as soon as possible after application.
DELTAGARD T&O 0.1% GRANULAR	2–3 lb./1000 sq.ft. or 87–131 lb./A	For sale, use, and storage by commercial applicators only. For outdoor use on lawns, grounds, and perimeter treatments. Irrigate as soon as possible with 0.25 to 0.5 inch water.
DELTAGARD GC 5SC	0.6–0.9 fl.oz./1000 sq.ft. or 26–39 fl.oz./A	DeltaGard GC 5SC is a RESTRICTED USE pesticide. For use on golf courses, sod farms, commercial and residential turf.
DELTAGARD T&O 5SC	0.6–0.9 fl.oz./1000 sq.ft. or 26–39 fl.oz./A	For commercial use only. For use on lawns in landscaped areas, around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Irrigate immediately after application.

Commercial Turf Insect Control (cont.)		
Insecticide and Formulation	Rate	Comments
BILLBUGS (cont.)		
dinotefuran		
ZYLAM 20 SG	1 oz./1000 sq.ft. or 2.7 lb. per acre	For insect control in residential, recreational, and commercial turfgrass. Make application prior to or during egg hatch.
ZYLAM LIQUID	1.8 fl.oz./1000 sq.ft. or 79 fl.oz./acre	For insect control in residential, recreational, and commercial turfgrass. Make application prior to or during egg hatch or at first appearance of young larvae.
imidacloprid		
MALLET 0.5 G	1.4–1.8 lb./1000 sq.ft.	Make the application before egg hatch. Not for use on sod farms.
MALLET 2 F	0.46–0.6 fl.oz. (14 to 17 ml)/1000 sq.ft.	Make the application before egg hatch.
MALLET 75 WSP	1 packet (1.6 oz.)/8250–11000 sq.ft.	Make the application before egg hatch. Not for use on sod farms.
MERIT 75 WSP	1.6 oz./8250–11,000 sq.ft.	For insect control in turfgrass including sod farms.
MERIT 75 WP	6.4–8.6 oz./A	For insect control in turfgrass including sod farms. For optimum control make application prior to egg hatch.
MERIT 2F	1.25–1.6 pt./A	For insect control in turfgrass including sod farms. For optimum control make application prior to egg hatch
MERIT 0.5 G	60–80 lb./A	For systemic insect control in turfgrass (home lawns, golf courses, cemeteries, parks, playgrounds, and athletic fields. NOT for use on sod farms. For optimum control make application prior to egg hatch..
lambda-cyhalothrin		
AVESTA CS	7 ml/1000 sq.ft.	Labeled for bluegrass billbug only. Not for use on golf courses or sod farms.
DEMAND CS	7 ml/1000 sq.ft.	Labeled for control of adult bluegrass billbug only. Not for use on golf courses or sod farms.
DEMAND EZ	28 ml/1000 sq.ft.	Labeled for control of adult bluegrass billbug only. Not for use on golf courses or sod farms.
DEMAND G	3–4 lb./1000 sq.ft.	Not for use on golf courses or sod farms.
PATROL	7 ml/1000 sq.ft.	Labeled for control of adult bluegrass billbug only. Not for use on golf courses or sod farms.
SCIMITAR CS	7 ml/1000 sq.ft. or 10 fl.oz./A	For use by individuals registered by the state to apply pesticide products. For use on lawns in landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Irrigate after application.
SCIMITAR GC	7 ml/1000 sq.ft. or 10 fl.oz./A	RESTRICTED USE insecticide. For use on same sites as Scimitar CS plus golf course turf and sod farms. Irrigate after application.
thiamethoxam		
CARAVAN G (+ fungicide)	2–2.8 lb./1000 sq.ft.	For control of larvae. Not for use on sod farms.
MERIDIAN 0.33G	7–9 lb./5000 sq.ft. or 60–80 lb./A	For use on turfgrasses on golf courses, residential lawns and commercial grounds (includes sod farms, playgrounds, and athletic fields).
MERIDIAN 25WG	12.7–17 oz./A	For use on turfgrasses on golf courses, residential lawns, and commercial grounds.
trichlorfon		
DYLOX 420 SL	6.9 fl.oz./1000 sq.ft.	For control of billbug larvae. Not for use on sod farms.
DYLOX 6.2 G	3 lb./1000 sq.ft.	For control of billbug larvae. Not for use on sod farms.

Commercial Turf Insect Control

Insecticide and Formulation	Rate	Comments
CHINCH BUGS		
acephate		
ORTHENE TTO 97	2.5–4 lb./A (golf course).	For use on golf courses or sod farms only.
	2.5–3 lb./A (sod farm)	
ORTHENE TTO 75 WSP	3.33–5.33 lb./A (golf course).	For use on golf courses or sod farms only.
	3.33–4 lb./A (sod farm)	
bifenthrin		
BASELINE 23.4% LIQUID	0.07–0.3 fl.oz./1000 sq.ft.	For use outdoors on home lawns, grounds, and ornamental gardens and parks. Not for use on sod farms or golf courses.
MENACE GC 7.9% LIQUID	0.25–0.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide.
ONYX 23.4% LIQUID	0.07–0.3 fl.oz./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms.
TALSTAR 7.9% P	0.5–1 fl.oz./1000 sq.ft.	Irrigate before application. For use on lawns.
TALSTAR PL 0.2% GRANULAR	100 lb./A (residential use) 200 lb./A (non-residential use)	For use on lawns in landscaped areas and perimeters around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Not for use on golf courses and sod farms. Irrigate with up to 0.25 inch of water after application.
TALSTAR SELECT	0.25–0.5 fl.oz./1000 sq.ft. or 10–20 fl.oz./acre	For use on sod farms and golf courses. Irrigate prior to application.
WISDOM LAWN GRANULAR	2.3–4.6 lbs./1000 sq.ft.	Not for use on golf courses or sod farms.
WISDOM FLOWABLE	0.23–0.46 oz./1000 sq.ft.	RESTRICTED USE insecticide.
bifenthrin + zeta-cypermethrin		
TALSTAR XTRA 0.20% + 0.05% GRANULAR	100 lb./A (residential use) 200 lb./A (non-residential use)	For use on lawns and landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Irrigate with up to 0.25 inch of water after application.
TALSTAR XTRA FEATURING VERGE GRANULAR TECHNOLOGY	2.3–4.6 lbs./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms or golf courses.
TALSTAR XTRA GC	2.3–4.6 lbs./1000 sq.ft.	RESTRICTED USE insecticide.
bifenthrin + zeta-cypermethrin +imidacloprid		
TRIPLE CROWN GOLF	0.46–0.80 fl.oz./1000 sq.ft. or 20–35 fl.oz./acre	RESTRICTED USE insecticide. For use on golf courses. Irrigate prior to application.
TRIPLE CROWN T&O	0.46–0.80 fl.oz./1000 sq.ft. or 20–35 fl.oz./acre	For use on lawns and landscaped areas around residential, institutional, public, commercial, and industrial buildings, parks, recreational, and athletic fields. Irrigate prior to application.
carbaryl		
SEVIN SL	6–8 qt./A	For agricultural or commercial use only. For use on turfgrass on golf courses, sports fields, domestic and commercial lawns, cemeteries, parks, campsites, and recreational areas. Do not allow public use of treated areas during applications or until sprays have dried. Irrigate prior to application. Do not irrigate within 24 hours following application.
chlorantraniliprole		
ACELEPRYN	0.184–0.46 fl.oz./1000 sq.ft.	For suppression of chinch bugs, apply before egg hatch.
ACELEPRYN G	1.5–2.3 lb./1000 sq.ft.	For suppression of chinch bugs, apply before eggs hatch.
chlorpyrifos		
CHLORPYRIFOS SPC 4	0.75 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For turf around industrial buildings and golf courses only.

Commercial Turf Insect Control (cont.)		
Insecticide and Formulation	Rate	Comments
CHINCH BUGS (cont.)		
HATCHET	0.75 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide for use on sod farms.
clothianidin		
ARENA 50 WDG	9.6–12.8 oz./A	For use on grass grown in industrial, commercial, and residential landscapes including athletic fields, cemeteries, sod farms, golf courses, home lawns, parks, and playgrounds. Irrigate after application.
ARENA 0.25 G	120–160 lb./A	For use on grass grown in industrial, commercial, and residential landscapes including athletic fields, cemeteries, sod farms, golf courses, home lawns, parks, and playgrounds. Irrigate after application.
clothianidin + bifenthrin		
ALOFT GC G	1.8–3.6 lb./1000 sq.ft.	RESTRICTED USE insecticide.
ALOFT LC SC	0.27–0.54 fl.oz./1000 sq.ft.	Not for use on golf courses or sod farms.
cyantraniliprole		
FERRENCE	0.184–0.46 fl.oz./1000 sq.ft.	For suppression of chinch bugs, apply Acelepryn before eggs hatch.
cyfluthrin		
TEMPO SC ULTRA	8 mg/1000 sq.ft. or 12 fl.oz./A	For pest management professionals and commercial use only. For landscape and residential turf. Not for use on golf courses.
TEMPO ULTRA GC	8 mg/1000 sq.ft. or 12 fl.oz./A	RESTRICTED USE insecticide. For use on turf on residential and commercial sites including golf courses.
TEMPO ULTRA WP	10 g/1000 sq.ft. or 15.4 oz./A	For pest management professionals and commercial use only. For turf on residential and commercial lawns only. Not for use on golf courses or sod farms. Irrigate after application.
TEMPO ULTRA WSP	50 g/5000 sq.ft.	For pest management professionals and commercial use only. For turf on residential and commercial lawns only. Not for use on golf courses or sod farms. Irrigate after application.
cypermethrin		
DEMON MAX	0.33–0.65 fl.oz./1000 sq.ft.	This is a professional pest control product that also has labeled uses for chinch bugs.
deltamethrin		
DELTAGARD 0.1% G	2–3 lb./1000 sq.ft. or 87–131 lb./A	For sale to, use, and storage by commercial applicators only. For turfgrass on lawns, grounds, and perimeter treatments. Not for use on golf courses or sod farms. Irrigate after application.
dinotefuran		
ZYLAM 20 SG	2.7 lb./A or 1 oz./1000 sq.ft.	For use on outdoor residential, recreational, and commercial turfgrass. For suppression only. Make application prior to hatching of first instar nymphs. Irrigate after application.
ZYLAM LIQUID	1.8 fl.oz./1000 sq.ft. or 79 fl.oz./acre	For insect control in residential, recreational, and commercial turfgrass. Make application prior to hatching of nymphs.
imidacloprid		
MALLET 0.5 G	1.8 lb./1000 sq.ft.	For suppression of chinch bugs, make application before the hatching of the first instar nymphs. Not for use on sod farms.
MALLET 75WSP	1 packet (1.6 oz.)/8250 sq.ft.	For suppression of chinch bugs, make application before the hatching of the first instar nymphs. Not for use on sod farms.
MALLETT 2 F	0.6 fl.oz. (14–17 ml)/ 1000 sq.ft.	For suppression of chinch bugs, make application before the hatching of the first instar nymphs
MERIT 75 WSP	1.6 oz./8250 sq.ft.	For insect control in turfgrass including sod farms. For use on outdoor residential, recreational, and commercial turfgrass. For suppression of chinch bugs apply prior to hatching of first instar nymphs.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
CHINCH BUGS (cont.)		
MERIT 75 WP	8.6 oz./A	For insect control in turfgrass including sod farms. For suppression of chinch bugs apply prior to hatching of first instar nymphs
MERIT 0.5 G	80 lb./A or 1.8 lb./1000 sq.ft.	For systemic insect control in turfgrass (home lawns, golf courses, cemeteries, parks, playgrounds, and athletic fields. NOT for use on sod farms. For suppression of chinch bugs apply prior to hatching of first instar nymphs
MERIT 2F	1.6 pt./A	For insect control in turfgrass including sod farms. For suppression of chinch bugs apply prior to hatching of first instar nymphs
lambda-cyhalothrin AVESTA CS	3.4–7 ml/1000 sq.ft.	Primarily a professional pest control product that is labeled for lawn uses. Not for use on golf courses or sod farms.
DEMAND G SCIMITAR CS	3–4 lb./1000 sq.ft. 0.47 fl.oz. (14 ml)/ 1000 sq.ft. or 20 oz./A	Not for use on golf courses or sod farms. Use on landscape turf only. Apply using 2 to 10 gallons of spray per 1,000 square feet. Water in following application 0.25 to 0.5 inch.
SCIMITAR GC	20 oz./A	RESTRICTED USE insecticide. Irrigate after application.
permethrin ASTRO	0.4–0.8 fl.oz./1000 sq.ft.	For use on lawns; around residential, institutional, public, and industrial buildings, parks, and recreational areas; and athletic fields. Not for use on sod farms.
thiamethoxam CARAVAN G (+ fungicide)	2–2.8 lb./1000 sq.ft.	Apply when young nymphs are first observed. Not for use on sod farms.
MERIDIAN 0.33G	7–9 lb./5000 sq.ft. or 60–80 lb./A	For use on turfgrasses on golf courses, residential lawns and commercial grounds (includes sod farms, playgrounds, and athletic fields). Irrigate after application.
MERIDIAN 25WG	12.7–17 oz./A	For use on turfgrasses on golf courses, residential lawns and commercial grounds. Apply when young nymphs first appear.
TANDEM (+ lambda cyhalothrin)	Make a single application of 0.6 fl.oz. (19 ml)/1000 sq.ft. or make two applications of 0.3 fl.oz. (10 ml)/1000 sq.ft. on a 3- to 5-week interval.	Apply when insects are first observed. Repeat applications on a 3- to 5-week interval to obtain control. Not for use on golf courses or sod farms.
trichlorfon DYLOX 420 SL	4.6–6.9 fl.oz./1000 sq.ft. or 200–300 fl.oz./A	For use on landscape and recreational turf and golf courses and residential turf.
DYLOX 80 T&O	3.75 oz./1000 sq.ft.	For use on landscape and recreational lawns and turf.
FIRE ANTS		
Baits		
abamectin AWARD II FIRE ANT BAIT	1 lb./A	Broadcast application for use on lawns. Not for use on sod farms.
OPTIGARD FIRE ANT BAIT	1 lb.A	Broadcast application for use on lawns. Not for athletic fields, golf courses, or sod farms.
hydromethylnon AMDRO BAIT	5 T./mound 1–1.5 lb./A	
MAXFORCE FIRE ANT KILLER GRANULAR BAIT	2–4 oz./5000 sq.ft. 1–2 lb./A	

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
FIRE ANTS (cont.)		
Baits (cont.)		
MAXFORCE FINE GRANULAR BAIT	2 T./mound 1 oz./1800 sq.ft.	
AMDRO PRO FIRE ANT BAIT	2–5 T./mound 1–1.5 lb./A	
hydromethylnon + s-methoprene		
EXTINGUISH PLUS	2–5 T./mound	
AMDRO BAIT	1.5 lb./A	
indoxacarb		
ADVION FIRE ANT BAIT	4 T./mound 1.5 lb./A	Avoid applying all baits just before or after irrigation or rain. The most effective method for control of ants over a broad area is the use of a broadcast bait two times per year (spring and fall) coupled with individual mound treatments as needed. Do not disturb mound.
metaflumizone		
SIESTA FIRE ANT BAIT	2–4 T./mound 1–1.5 lb./A	
pyriproxyfen		
DISTANCE FIRE ANT BAIT	1–1.5 lb./A or 0.35–0.5 oz./1000 sq.ft.	
s-methoprene		
EXTINGUISH BAIT	3–5 T./mound 1–1.5 lb./A	
Mound Treatments		
abamectin		
AWARD II FIRE ANT BAIT	5–7 T./mound	Not for use on sod farms.
OPTIGARD FIRE ANT BAIT	5–7 T./mound	For use on lawns only.
acephate		
ORTHENE TTO 75WP	1 oz./5 gal. water	Drench mounds when queen and brood are located close to soil surface on warm, dry days. Generally it takes 1 to 2 gallons of water to drench a fire ant mound effectively
ORTHENE TTO 97	0.75 oz./5 gal. water	
bifenthrin		
MENACE GC	1 t./gal. water	RESTRICTED USE insecticide. Apply 1 to 2 gallons of finished spray per mound including a 4-foot circle around each mound.
TALSTAR P	1 fl.oz./gal. water	Sprinkle 1 to 2 gallons of mixture over mound until wet including a 3-foot circle area around each mound.
TALSTAR P PROFESSIONAL	1 oz./gal. water	
TALSTAR PL GRANULAR	0.5 cup/mound	Drench treated mound with 1 to 2 gallons of water.
TALSTAR SELECT	1 t./gal. water	Apply 1 to 2 gallons of finished spray per mound.
WISDOM LAWN GRANULAR	½ cup of granular product per mound	Follow application of product with 1 to 2 gallons of water.
bifenthrin + zeta-cypermethrin		
TALSTAR XTRA FEATURING VERGE GRANULE TECHNOLOGY	½ cup granulated product per mound	Follow application of product with 1 to 2 gallons of water. Not for use on golf courses or sod farms.
TALSTAR XTRA GRANULAR	0.5 cup/mound	Drench treated mound with 1 to 2 gallons of water.
bifenthrin + zeta-cypermethrin + imidacloprid		
TRIPLE CROWN GOLF	0.80 oz./1–2 gal. water	RESTRICTED USE insecticide. Sprinkle mound until it is wet, and treat 3 feet out around the mound.
TRIPLE CROWN T&O	0.80 oz./1–2 gal. water	Sprinkle mound until it is wet, and treat 3 feet out around the mound.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
FIRE ANTS (cont.)		
Mound Treatments (cont.)		
carbaryl		
SEVIN SL	0.75 fl.oz./gal. water	
chlorpyrifos		
CHLORPYRIFOS SPC 4	1 fl.oz./4 gal. water	RESTRICTED USE insecticide. Sprinkle 1 to 2 gallons of diluted insecticide over the mound surface and a 2-ft. diameter area around each mound. For turf uses around industrial buildings and golf courses.
clothianidin + bifenthrin		
ALOFT GC G	0.7 oz./mound or 2.3–3.6 lb./1000 sq.ft. applied to a 4-ft. diameter circle around mound	RESTRICTED USE insecticide.
ALOFT LC	1 t./gal. and apply 1–2 gal. of finished spray per mound.	If the soil is not moist, irrigate before application or use a higher volume application.
cyfluthrin		
BAYER FIRE ANT KILLER	1 t./mound	
cypermethrin		
DEMON MAX	Apply 1–2 gal. of 0.1% emulsion to each mound and a 2-ft. diameter area around the mound.	Not for use on golf courses or sod farms.
DEMON WP	2 scoops (0.66 oz.)/gal. water	Sprinkle 1 gallon of mixture over the mound up to 12 inches in diameter. Not for use on golf courses or sod farms.
deltamethrin		
BENGAL ULTRA DUST FIRE ANT KILLER 0.05%	1 T/mound	
DELTA DUST		Apply dust in shaker can and thoroughly cover mound.
DELTAGARD G	2 T/mound	Immediately after applying granules, sprinkle mound gently with at least 1 gallon of water.
DELTAGARD GC	2 T/mound	RESTRICTED USE insecticide. Immediately after applying granules, sprinkle mound gently with at least 1 gallon of water.
DELTAGARD GC 5SC	1.5 fl.oz./gal. water	RESTRICTED USE insecticide.
DELTAGARD T&O GRANULAR	2 T/mound	Immediately after applying granules, sprinkle mound gently with at least 1 gallon of water.
DELTAGARD T&O 5SC	1.5 fl.oz./gallon	Gently sprinkle mound with dilute insecticide
SUSPEND POLYZONE	1.5 fl.oz./gal. water	For use on lawns. Apply 1–2 gallons over each mound and a 2-ft. diameter circle around the mound.
SUSPEND SC	1.5 fl.oz./gal. water	For use on lawns. Apply 1–2 gallons over each mound and a 2-ft. diameter circle around the mound.
TERRO FIRE ANT KILLER (0.05%)	1 T/mound	
imidacloprid + cyfluthrin		
TEMPRID FX	0.54 fl.oz. (16 ml)/gal. water	For lawn/landscape applications only. Thoroughly drench or inject the mound.
TEMPRID SC	0.54 fl.oz. (16 ml)/gal. water	For lawn/landscape applications only. Thoroughly drench or inject the mound.
lambda-cyhalothrin		
AVESTA CS	0.5 fl.oz./2.5 gal. water	For use on lawns and athletic fields. Soak each mound and a 3-ft. diameter circle around the mound.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
FIRE ANTS (cont.)		
Mound Treatments (cont.)		
DEMAND CS	0.5 fl.oz./2.5 gal. water	For use on lawns and athletic fields. Soak each mound and a 3-ft. diameter circle around the mound.
DEMAND EZ	2 fl.oz./2.5 gal. water	For use on lawns and athletic fields. Soak each mound and a 3-ft. diameter circle around the mound.
SCIMITAR CS	0.5 fl.oz./2.5 gal. water	Use on landscape turf only.
SCIMITAR GC	0.5 fl.oz./2.5 gal. water	RESTRICTED USE insecticide.
permethrin ASTRO	0.5 % emulsion	RESTRICTED USE insecticide. Use on landscape turf only. Apply 1 to 2 gallons of emulsion to each mound.
pyriproxyfen DISTANCE FIRE ANT BAIT	1–4 T/mound	
spinosad CONSERVE	0.1 fl.oz./gal. water	
ENTRUST	0.45 gram/1 gal. water	Use 1 to 2 gallons per mound applying to the mound out to 12 inches around each mound.
ENTRUST SC	0.05 fl.oz./gal. water	Use 1 to 2 gallons per mound applying to the mound out to 12 inches around each mound.
thiamethoxam MERIDIAN 25WG	0.1–0.3 oz./gal. water	Use 2 to 3 gallons of solution per mound.
thiamethoxam + lambda cyhalothrin TANDEM	Mix 0.15 fl.oz./2.5 gal. water	Treat individual mounds out to a 3-ft. diameter circle around the mound using a watering can. Not for use on golf courses or sod farms.
Broadcast Treatments		
bifenthrin BASELINE	0.07–0.3 fl.oz./1000 sq. ft.	Apply to lawns or athletic fields for control of foraging ants.
MENACE GC	0.07–0.3 fl.oz./1000 sq. ft.	RESTRICTED USE insecticide.
ONYX	0.07–0.3 fl.oz./1000 sq.ft.	Apply to lawns or athletic fields for control of foraging ants.
TALSTAR P	0.5–1 fl.oz./1000 sq.ft.	
TALSTAR P PROFESSIONAL	0.5–1.0 fl.oz./1000 sq.ft.	If soil is not moist, irrigate before application. Not for use on golf courses or sod farms.
TALSTAR PL GRANULAR	2.3–4.6 lb./1000 sq.ft.	If soil is not moist, irrigate before application. Not for use on golf courses or sod farms.
TALSTAR SELECT	0.5–1.0 fl.oz./1000 sq.ft. or 20–40 fl.oz./acre	For use on sod farms and golf courses. If soil is not moist, irrigate before application.
WISDOM	0.23–0.46 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide.
WISDOM LAWN GRANULAR	2.3–4.6 lbs./1000 sq.ft.	
bifenthrin + zeta-cypermethrin TALSTAR XTRA GC	2.3–4.6 lb./1000 sq.ft.	
TALSTAR XTRA FEATURING VERGE GRANULE TECHNOLOGY	2.3–4.6 lb./1000 sq.ft.	Not for use on golf courses or sod farms.
bifenthrin + zeta-cypermethrin + imidacloprid TRIPLE CROWN GOLF	0.46–0.80 fl.oz./1000 sq.ft. or 20–35 fl.oz./acre	RESTRICTED USE insecticide. For use on golf courses.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
FIRE ANTS (cont.)		
Broadcast Treatments (cont.)		
TRIPLE CROWN T&O	0.46–0.80 fl.oz./1000 sq.ft. or 20–35 fl.oz./acre	For use on lawns and landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. If soil is not moist, irrigate before application. Apply when adults are first observed. If soil is not moist, irrigate before application.
carbaryl		
SEVIN SL	3 fl.oz./1000 sq.ft.	
chlorpyrifos		
chlorpyrifos SPC 4	0.75 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For turf uses around industrial buildings and golf courses. Can be used on sod before harvest.
clothianidin + bifenthrin		
ALOFT GC G	2.3–3.6 lb./1000 sq.ft.	RESTRICTED USE insecticide.
ALOFT LC	0.46 fl.oz./1000 sq.ft.	If the soil is not moist, irrigate before application or use a higher volume application.
cyfluthrin		
TEMPO SC ULTRA	8 ml/1000 sq.ft.	Use on landscape and recreational turf only.
TEMPO ULTRA GC	0.20 fl.oz. (8 ml)/1000 sq.ft.	Not for use on sod farms.
TEMPO ULTRA WP	15.4 oz./A	Use on residential and commercial lawns only
deltamethrin		
DELTAGARD G	2-3 lb./1000 sq.ft.	Use on landscape turf only.
fipronil		
CHIPCO CHOICE	4.6 oz./1000 sq.ft.	For use on golf courses, sod farms, sports fields, and other locations.
TOP CHOICE	2 lb./1000 sq.ft.	For use on golf courses, sod farms, sports fields, and other locations. Irrigate after application.
imidacloprid + cyfluthrin		
TEMPRID FX	0.54 fl.oz. (16 ml)/1000 sq.ft.	For lawn/landscape applications only.
TEMPRID SC	0.54 fl.oz. (16 ml)/1000 sq.ft.	For lawn/landscape applications only.
lambda-cyhalothrin		
PATROL	3.4–7 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND CS	3.4–7 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND EZ	13.6–28 ml/1000 sq.ft.	For use on lawns and athletic fields.
SCIMITAR CS	3.4–7 ml/1000 sq.ft. or 5–10 fl.oz./A	Use on lawns in landscaped areas, around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields.
SCIMITAR GC	3.4–7 ml/1000 sq.ft. or 5–10 fl.oz/A	RESTRICTED USE insecticide. Use on golf courses, sod farms, and other locations.
thiamethoxam + lambda cyhalothrin		
TANDEM	Make a single application of 0.6 fl.oz. (19 ml)/1000 sq.ft. or make two applications of 0.3 fl.oz. (10 ml)/1000 sq.ft. on a 3- to 5-week interval.	Not for use on golf courses or sod farms.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
MOLE CRICKETS		
acephate		
ORTHENE TTO 97	3.9 lb./A (golf course) 2.5–3 lb./A (sod farm)	For use on golf courses and sod farms only.
ORTHENE TTO WSP	2.66–5.33 lb./A (golf course) 3.33–4 lb./A (sod farm)	For use on golf courses and sod farms only.
bifenthrin		
BASELINE 23.4% LIQUID	0.07–0.3 fl.oz./1000 sq.ft.	For use outdoors on home lawns, grounds, and ornamental gardens and parks. Not for use on sod farms or golf courses.
MENACE GC 7.9% LIQUID	0.25–0.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide.
ONYX 23.4% LIQUID	0.07–0.3 fl.oz./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms.
TALSTAR P PROFESSIONAL	0.5–1.0 fl.oz./1000 sq.ft.	Irrigate before and after application. Not for use on golf courses or sod farms.
TALSTAR PL GRANULAR	2.3–4.6 lb./1000 sq.ft.	Irrigate before and after application. Do not apply more than 2.3 pounds per 1,000 square feet per application to residential lawns. Not for use on golf courses or sod farms.
TALSTAR XTRA GRANULAR	100 lb./A (residential) 200 lb./A (non-residential)	Treat site immediately before peak egg hatch. Irrigate before and after application.
TALSTAR SELECT	0.25–0.50 fl.oz./1000 sq.ft. or 10–20 fl.oz./acre	For use on sod farms and golf courses. Apply late in the day and water in with up to 0.5 inches of water.
WISDOM FLOWABLE	0.23–0.46 oz./1000 sq.ft.	
bifenthrin + zeta-cypermethrin		
TALSTAR XTRA FEATURING VERGE GRANULAR TECHNOLOGY		
TALSTAR XTRA GC	2.3–4.6 lb./1000 sq.ft.	RESTRICTED USE insecticide.
bifenthrin + zeta-cypermethrin + imidacloprid		
TRIPLE CROWN GOLF	0.46–0.80 fl.oz./1000 sq.ft. or 20–35 fl.oz./acre	RESTRICTED USE insecticide. For use on golf courses. Apply late in the day and water in with up to 0.5 inches of water.
TRIPLE CROWN T&O	0.46–0.80 fl.oz./1000 sq.ft. or 20–35 fl.oz./acre	For use on lawns and landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Apply late in the day and water in with up to 0.5 inches of water.
chlorpyrifos		
CHLORPYRIFOS SPC 4	1.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For turf uses around industrial buildings and golf courses.
DURSBAN 50 W	4–6 lb./A	RESTRICTED USE insecticide. Sod farm use only. Minimum of 50 gallons of water per acre.
HATCHET	1.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. Apply to turf grown for sod only through high pressure injection or other subsurface application.
carbaryl		
MOLE CRICKET BAIT	0.75–0.9 lb./1000 sq.ft.	This is a bait. Product may be applied to lawns by push spreader only and should be watered-in immediately following treatment. Baits are used primarily for control of large nymphs and adults.
clothianidin		
ARENA 50WDG	12.8 oz./A	Irrigate after application. Apply during peak egg hatch. For suppression
ARENA 0.25G	160 lb./A	

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
MOLE CRICKETS (cont.)		
clothianidin + bifenthrin		
ALOFT GC G	1.8–3.6 lb./1000 sq.ft.	RESTRICTED USE insecticide.
ALOFT LC SC	0.27–0.54 fl.oz./1000 sq.ft.	Not for use on golf courses or sod farms.
cypermethrin		
DEMON MAX	0.33–0.65 fl.oz./1000 sq.ft.	Primarily a structural pest control product with labeled usage for lawns.
cyfluthrin		
TEMPO SC ULTRA	8 ml/1000 sq.ft. or 12 fl.oz./A	For pest management professionals and commercial use only. For use on landscape and recreational turfgrass. Not for use on golf courses.
TEMPO ULTRA GC	8 ml/1000 sq.ft. or 12 fl.oz./A	RESTRICTED USE insecticide. For use on residential and commercial sites, including golf courses. Apply at peak egg hatch.
TEMPO ULTRA WP	10 g/1000 sq.ft. or 15.4 oz./A	For pest management professionals and commercial use only. For use on residential and commercial lawns. Not for use on golf courses or sod farms.
deltamethrin		
DELTAGARD G 0.1% GRANULAR	2–3 lb./1000 sq.ft.	For sale, use, and storage by commercial applicators only. For outdoor use on lawns, grounds, and perimeter treatments. After application, irrigate as soon as possible with 0.25 to 0.5 inch of water. Do not apply more than once per week.
DELTAGARD TT&O 0.1% GRANULAR	2–3 lb./1000 sq.ft. or 87–131 lb./A	For sale, use, and storage by commercial applicators only. For outdoor use on lawns, grounds, and perimeter treatments. After application, irrigate as soon as possible with 0.25 to 0.5 inch of water.
DELTAGARD GC 5SC	0.6–0.9 fl.oz./1000 sq.ft. or 26 to 39 fl.oz./A	RESTRICTED USE insecticide. For use on golf courses, sod farms, and commercial and residential turf.
DELTAGARD TT&O 5SC	0.6–0.9 fl.oz./1000 sq.ft. or 26 to 39 fl.oz./A	For commercial use only on lawns in landscaped areas; around residential, institutional, public, commercial, and industrial buildings; and in parks, recreational areas, and athletic fields. Irrigate immediately after application.
dinotefuran		
ZYLAM 20SG	1 oz./1000 sq.ft. or 2.7 lb./A	Apply prior to or during the peak egg hatch period. When adults or large nymphs are present and actively tunneling, tank mix with a curative insecticide.
ZYLAM LIQUID	1.8 fl.oz./1000 sq.ft. or 79 fl.oz./A	Apply prior to or during the peak egg hatch period. When adults or large nymphs are present and actively tunneling, tank mix with a curative insecticide.
fipronil		
CHIPCO CHOICE	4.6–9.4 oz./1000 sq.ft. or 12.5–25 lb./A	Apply using slit-placement application equipment. For use on golf courses, sod farms, sports fields, and other locations.
imidacloprid		
MALLET 0.5 G	1.8 lb./1000 sq.ft.	Make the application prior to egg hatch. Not for use on sod farms.
MALLET 75 WSP	1 packet (1.6 oz.)/ 8,250 sq.ft.	Make the application before or during peak egg hatch. Not for use on sod farms.
MERIT 75 WSP	1.6 oz./8250 sq.ft.	For insect control in turfgrass, including sod farms. Apply during peak egg hatch. Irrigate within 24 hours after application.
MERIT 75 WP	8.6 oz./A.	For insect control in turfgrass, including sod farms. Apply prior to peak egg hatch. Irrigate within 24 hours after application.
MERIT 2F	1.6 pt./A. or 0.6 fl.oz./1000 sq.ft.	For insect control in turfgrass including sod farms. Apply prior to or during peak egg hatch. Irrigate within 24 hours after application.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
MOLE CRICKETS (cont.)		
MERIT 0.5G	80 lb./A.	For systemic insect control in turfgrass, including home lawns, golf courses, cemeteries, parks, playgrounds, and athletic fields. NOT for use on sod farms. Apply prior to egg hatch. Irrigation or rain fall needed after application.
indoxacarb		
ADVION INSECT GRANULE	1.15–4.6 lb./1000 sq.ft.	A granular insecticide baIt for use on lawns in residential, commercial, public and institutional landscaped areas, golf courses, parks, recreational areas, and sports and/or athletic fields. For best results apply in late afternoon. If soil is not moist, irrigate before application to bring mole crickets to soil surface.
PROVAUNT	0.275 oz./1000 sq.ft. or 12 oz./A	For use on landscape and recreational turfgrass, including golf courses. Not for use on sod farms.
lambda-cyhalothrin		
AVESTA CS	7 ml/1000 sq.ft.	Apply with 4 to 10 gallons of water per 1,000 square feet. Not for use on golf courses or sod farms.
DEMAND CS	7 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND EZ	28 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND G	3–4 lb./1000 sq.ft.	Not for use on golf courses or sod farms.
PATROL	7 ml/1000 sq.ft.	For use on lawns and athletic fields.
SCIMITAR CS	7 ml/1000 sq.ft. (nymphs and young adults)	For use by individuals registered by the state to apply pesticide products. Use on lawns in landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Apply in 4 to 10 gallons of water per 1,000 square feet. Use a non-ionic wetting agent. Water immediately after application.
SCIMITAR GC	7 ml/1000 sq.ft. (nymphs and young adults)	RESTRICTED USE insecticide. For use on same sites as Scimitar CS plus golf courses and sod farms. Apply in 4 to 10 gallons of water per 1,000 square feet. Use a wetting agent. Apply to turf wet with dew or rain or that has been irrigated. Water immediately after application with up to 0.5 inch of water.
permethrin		
ASTRO	0.8–9.6 fl.oz./1000 sq.ft.	Rate and amount of water applied dependent on the size of the lawn. See label for specifics. Not for use on golf courses or sod farms.
PERMETROL 10% ec	7 tsp./10 gal. water/1000 sq.ft.	Irrigate with ¼ inch of water immediately after application.
thiamethoxam		
CARAVAN G (+ FUNGICIDE)	2–2.8 lb./1000 sq.ft.	Not for use on sod farms.
MERIDIAN 0.33G	7–9 lb./5000 sq.ft. or 60–80 lb./A	For use on turfgrass on golf courses, residential lawns, and commercial grounds, including sod farms, playgrounds, and athletic fields. Provides suppression of mole crickets.
MERIDIAN 25WG	12.7–17 oz./A	For use on turfgrass on golf courses, residential lawns, and commercial grounds. Provides suppression of mole crickets.
TANDEM (+ LAMBDA CYHALOTHRIN)	Make a single application of 0.6 fl.oz. (19 ml)/1000 sq.ft. or make two applications of 0.3 fl.oz. (10 ml)/1000 sq.ft. on a 3- to 5-week interval.	Not for use on golf courses or sod farms.
trichlorfon		
DYLOX 420 SL	6.9 fl.oz./1000 sq.ft.	For use on landscape and recreational turf and golf courses and residential turf. Irrigate after application to moisten the top 1 inch of soil
DYLOX 6.2 GRANULAR	3 lb./1000 sq.ft.	For commercial use only. Can be used on golf courses, Irrigate after application.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
RHODESGRASS AND OTHER MEALYBUGS		
bifenthrin		
BASELINE 23.4% LIQUID	0.07–0.15 fl.oz./1000 sq.ft.	For use outdoors on home lawns, grounds, and ornamental gardens and parks. Not for use on sod farms or golf courses.
MENACE GC 7.9% LIQUID	0.25–0.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide.
ONYX 23.4% LIQUID	0.07–0.15 fl.oz./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms.
TALSTAR P	0.25–0.5 fl.oz./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms.
TALSTAR PL	1.15–2.3 lb./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms.
TALSTAR S SELECT	0.25–0.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For use on golf courses or sod farms only.
bifenthrin + zeta-cypermethrin		
TALSTAR XTRA	1.15–2.3 lb./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms or golf courses.
TALSTAR XTRA FEATURING VERGE GRANULAR TECHNOLOGY	1.15–2.3 lb./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms or golf courses.
TALSTAR XTRA GC	1.15–2.3 lb./1000 sq.ft.	RESTRICTED USE insecticide.
deltamethrin		
DELTA GARD G	2–3 lb./1000 sq.ft.	Apply for control of adults only outdoors to turf on lawns and grounds. Not for use on sod farms or golf courses.
SPITTLEBUGS		
acephate		
ORTHENE TTO 75 WSP	2.66–5.33 lb./A (golf course) 3.33–4 lb./A (sod farms)	For use on golf courses and sod farms only.
ORTHENE TTO 97 WSP	2–3.9 lb./A (golf course) 2.5–3 lb./A (sod farms)	For use on golf courses and sod farms only.
bifenthrin		
BASELINE 23.4% LIQUID	0.07–0.3 fl.oz./1000 sq.ft.	For use outdoors on home lawns, grounds, and ornamental gardens and parks. Not for use on sod farms or golf courses.
ONYX	0.07–0.15 fl.oz./1000 sq.ft.	For use on lawns, recreational areas, athletic fields.
carbaryl		
SEVIN SL	2–4 qt./A	For agricultural or commercial use only. For use on turfgrass on golf courses, sports fields, domestic and commercial lawns, cemeteries, parks, campsites, and recreational areas. Do not allow public use of treated areas during applications or until sprays have dried. Irrigate prior to application. Do not irrigate within 24 hours following application.
chlorantraniliprole		
ACELEPRYN	0.275–0.46 fl.oz./ 1000 sq.ft.	Not for use on sod farms.
clothianidin		
ARENA 0.25 G	80–160 lb./A	
ARENA 25 WDG	0.14–0.29 oz./1000 sq.ft.	
ALOFT GC (+ bifenthrin)	1.8–3.6 lb./1000 sq.ft.	RESTRICTED USE insecticide.
ALOFT LC SC (+ bifenthrin)	0.27–0.54 fl.oz./1000 sq.ft.	Not for use on golf courses or sod farms.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
SPITTLEBUGS (cont.)		
deltamethrin		
DELTAGARD 0.1% G	2–3 lb./1000 sq.ft. or 87–131 lb./A	For sale to, use, and storage by commercial applicators only. For turfgrass on lawns, grounds and perimeter treatments. Not for use on golf courses or sod farms.
DELTAGARD T&O 0.1% GRANULAR	2–3 lb./1000 sq.ft. or 87–131 lb./A	For sale, use, and storage by commercial applicators only. For outdoor use on lawns, grounds and perimeter treatments. Irrigate after application.
permethrin		
PERMETROL GRANULES	2–3 lb./1000 sq.ft.	Apply using a fertilizer spreader. Not for use on sod farms.
thiamethoxam		
MERIDIAN 0.33G	7–9 lb./5000 sq.ft.	
MERIDIAN 25 WG	3–4 oz./10000 sq.ft.	
CARAVAN G (+ FUNGICIDE)	2–2.8 lb./1000 sq.ft.	Not for use on sod farms.
TURF CATERPILLARS		
acephate		
ORTHENE TTO 75 WP	1.33–3.33 lb./A	For use on golf courses and sod farms only. Use a minimum of 5 gallons of water per 1000 square feet.
ORTHENE TTO 97	1–2.5 lb./A	For use on golf courses and sod farms only. Use a minimum of 5 gallons of water per 1000 square feet.
azadirachtin		
AZATROL EC	1.3 fl.oz./1000 sq.ft.	
bacillus thuringiensis		
DIPEL PRO DF	0.5–2 lb./A	
XENTARI	0.5–2 lb./a	
bifenthrin		
BASELINE 23.4% LIQUID	0.07–0.15 fl.oz./1000 sq.ft.	For use outdoors on home lawns, grounds, and ornamental gardens and parks. Not for use on sod farms or golf courses.
MENACE GC 7.9% LIQUID	0.25 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide.
ONYX 23.4% LIQUID	0.075–0.15 fl.oz./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms.
TALSTAR 7.9% P	0.18–0.25 fl.oz./1000 sq.ft.	For use on lawns. Delay watering or mowing for 24 hours after application.
TALSTAR PL 0.2% GRANULAR	50 lb./A	For use on lawns in landscaped areas and perimeters around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, athletic fields. Not for use on golf courses and sod farms. Irrigate with up to 0.1 inch of water after application.
TALSTAR SELECT	0.25 fl.oz./1000 sq.ft. or 10 fl.oz./A	For use on sod farms and golf courses. Delay watering or mowing for 24 hours after application.
WISDOM FLOWABLE	0.23–0.46 oz./1000 sq.ft.	
WISDOM LAWN GRANULES	1.15 lb./1000 sq.ft.	
bifenthrin + zeta-cypermethrin		
TALSTAR XTRA 0.20% + 0.05% GRANULAR	50–100 lb./A	For use on lawns and landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Irrigate with water after application.
TALSTAR XTRA GC	2.3–4.6 lb./1000 sq.ft.	RESTRICTED USE insecticide.
TALSTAR XTRA FEATURING VERGE GRANULE TECHNOOY	2.3–4.6 lb./1000 sq.ft.	Not for use on gold courses or sod farms.

Commercial Turf Insect Control

Insecticide and Formulation	Rate	Comments
TURF CATERPILLARS (cont.)		
bifenthrin + zeta-cypermethrin + imidacloprid		
TRIPLE CROWN GOLF	0.23–0.34 fl.oz./1000 sq.ft. or 10–15 fl.oz./A	RESTRICTED USE insecticide. For use on golf courses. Delay watering or mowing for 24 hours after application.
TRIPLE CROWN T&O	0.23–0.34 fl.oz./1000 sq.ft. or 10–15 fl.oz./acre	For use on lawns and landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Delay watering or mowing for 24 hours after application.
carbaryl		
SEVIN SL	2–4 qt./A (armyworms, cutworms) 6-8 qt./A (sod webworms)	For agricultural or commercial use only. For use on turfgrass on golf courses, sports fields, domestic and commercial lawns, cemeteries, parks, campsites, and recreational areas. Do not allow public use of treated areas during applications or until sprays have dried. Irrigate prior to application. Do not irrigate within 24 hours following application.
chlorantraniliprole		
ACELEPRYN	2–4 fl.oz./A	Use on landscape and recreational turfgrass, golf courses and sod farms. Delay watering or mowing for 24 hours after application.
ACELEPRYN GRANULAR	50–100 lb./A	Use on landscape and recreational turfgrass, golf courses and sod farms. Delay watering or mowing for 24 hours after application.
chlorpyrifos		
CHLORPYRIFOS SPC 4	0.75 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For turf uses around industrial buildings and golf courses.
DURSBAN 50	2 lb./A	Apply to turfgrass grown for sod or seed. For sod webworms delay watering or mowing for 12 to 24 hours after application.
HATCHET	0.75 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. Apply to turf grown for sod only through high-pressure injection or other subsurface application.
clothianidin		
ARENA 0.25G	80–160 lb./A	
ARENA 25 WDG	0.14–0.29/1000 sq.ft.	
ALOFT GC (+ bifenthrin)	1.8–3.6 lb./1000 sq.ft.	RESTRICTED USE insecticide.
ALOFT LC SC (+ bifenthrin)	0.27–0.54 fl.oz./1000 sq.ft.	Not for use on gold courses or sod farms.
cyantraniliprole		
REFERENCE	0.046–0.367 fl.oz./1000 sq.ft. or 2–16 fl.oz./A	For use on landscape and recreational turfgrass including golf courses and sod farms. Delay watering or mowing for 24 hours after application.
cyfluthrin		
TEMPO SC ULTRA	8 ml/1000 sq.ft. or 6–12 fl.oz./A	For pest management professionals and commercial use only. For landscape and residential turf. Not for use on golf courses.
TEMPO ULTRA GC	4–8 ml/1000 sq.ft. or 6–12 fl.oz./A	RESTRICTED USE insecticide. For use on turf on residential and commercial sites including golf courses. Do not water or mow for 24 hours after application.
TEMPO ULTRA WP	5–10 g/1000 sq.ft. or 7.7–15.4 oz./A	For pest management professionals and commercial use only. For turf on residential and commercial lawns only. Not for use on golf courses or sod farms. Do not water or mow for 24 hours after application.
deltamethrin		
DELTA GARD 0.1% G	2–3 lb./1000 sq.ft. or 87–131 lb./A	For sale to, use, and storage by commercial applicators only. For turfgrass on lawns, grounds, and perimeter treatments. Not for use on golf courses or sod farms. Irrigate after application.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
TURF CATERPILLARS (cont.)		
DELTAGARD T&O 0.1% GRANULAR	2–3 lb./1000 sq.ft. or 87–131 lb./A	For sale, use, and storage by commercial applicators only. For outdoor use on lawns, grounds and perimeter treatments. Irrigate after application.
DELTAGARD GC 5SC	0.4–0.6 fl.oz./1000 sq.ft. or 8.75–17.5 fl.oz./A	RESTRICTED USE insecticide. For use on golf courses, sod farms, commercial and residential turf.
DELTAGARD T&O 5SC	0.2–0.4 fl.oz./1000 sq.ft. or 8.75–17.5 fl.oz./A	For commercial use only. Lawns in landscaped areas, around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, and athletic fields. Irrigate immediately after application.
diflubenzuron DIMILIN 2L	2 oz. /A	RESTRICTED USE insecticide. Use on sod farms only. Apply before larvae become a half inch long in 20 to 50 gallons of water per acre.
dinotefuran ZYLAM 20 SG	1 oz./1000 sq.ft. or 2.7 lb./A	For insect control in residential, recreational, and commercial turfgrass. For control of sod webworm and suppression of cutworms.
ZYLAM LIQUID	1.8 oz./1000 sq.ft. or 79 fl.oz./A	For insect control in residential, recreational, and commercial turfgrass. For control of armyworms, cutworms, and sod webworms. Apply when caterpillars are small.
indoxacarb PROVAUNT	2–4 oz./A or 0.046–0.092 oz./ 1000 sq.ft.	For use on landscape and recreational turfgrass, including golf courses. Delay mowing and irrigation for 24 hours after application. If applied to turf maintained at greater than 1 inch, use 4 ounces per acre application rate.
lambda-cyhalothrin AVESTA CS	7 ml/1000 sq.ft.	Apply with 4–10 gallons of water per 1,000 square feet. Not for use on golf courses or sod farms.
DEMAND CS	7 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND EZ	28 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND G	3–4 lb./1000 sq.ft.	Not for use on golf courses or sod farms.
PATROL	7 ml/1000 sq.ft.	For use on lawns and athletic fields.
SCIMITAR CS	3.4–7 ml/1000 sq.ft. or 5–10 fl.oz./A	For use on lawns in landscaped areas around residential, institutional, public, commercial, and industrial buildings, parks, recreational areas, and athletic fields. Apply in 2 to 5 gallons of water per 1,000 square feet. Delay watering or mowing for 24 hours after application. Not for use on golf courses or sod farms
SCIMITAR GC	3.4–7 ml/1000 sq.ft. or 5–10 fl.oz./A	RESTRICTED USE insecticide. Use on same sites as Scimitar CS plus golf courses and sod farms. Apply in 2 to 5 gallons of water per 1,000 square feet. Delay watering or mowing for 24 hours after application
permethrin ASTRO	0.4–0.8 fl.oz./1000 sq.ft.	For use on lawns; around residential, institutional, public, commercial, and industrial buildings; parks; recreational areas; and athletic fields. Not for use on sod farms.
PERMETROL	7 tsp./10 gal. water/1000 sq.ft.	
PERMETROL GRANULES	2–3 lb./1000 sq.ft.	Apply using a fertilizer spreader. Not for use on sod farms.
spinosad CONSERVE SC	0.25–0.8 fl.oz./1000 sq.ft. or 10–35 fl.oz./A	For use on turfgrass. Lower rates effective against small fall armyworms and sod webworms, but higher rate is required against cutworms. Delay watering or mowing for 24 hours after application.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
TURF CATERPILLARS (cont.)		
ENTRUST SC	2–4 fl.oz./A	For use on sod farms only.
MATCHPOINT	0.08–0.41 oz./1000 sq.ft.	Not for use on residential turf.
TRACER	1–2 fl.oz./A	For use on sod farms only.
thiamethoxam		
CARAVAN G (+ FUNGICIDE)	2–2.8 lb./1000 sq.ft.	Apply when young nymphs are first observed. Not for use on sod farms.
MERIDIAN 0.33G	7–9 lb./5000 sq.ft.	Only labeled for sod webworms.
MERIDIAN 25 WG	3–4/10000 sq.ft.	Only labeled for sod webworms.
TANDEM (+ LAMBDA CYHALOTHRIN)	Make a single application of 0.6 fl.oz. (19 ml) per 1000 sq.ft. or make two applications of 0.3 fl.oz. (10 ml) per 1000 sq.ft. on a 3- to 5-week interval.	Apply when insects are first observed. Repeat applications on a 3- to 5-week interval to obtain control. Not for use on golf courses or sod farms.
trichlorfon		
DYLOX 420 SL	4.6–6.9 fl.oz./1000 sq.ft. or 200–300 fl.oz./A	For use on landscape and recreational turf and golf courses and residential turf.
TURF MITES		
azadirachtin		
AZATROL EC	Up to 1.3 fl.oz./1000 sq.ft.	Apply using 1 to 2 gal. water/1000 sq.ft.
bifenthrin		
BASELINE 23.4% LIQUID	0.07–0.15 fl.oz./1000 sq.ft.	For use outdoors on home lawns, grounds, and ornamental gardens and parks. Not for use on sod farms or golf courses.
MENACE GC 7.9% LIQUID	0.25–0.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For control of eriophyid mites, apply with a surfactant.
ONYX 23.4% LIQUID	0.07–0.15 fl.oz./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms.
TALSTAR P	0.25–0.5 fl.oz./1000 sq.ft.	For use outdoors on home lawns, athletic fields, recreational areas, and parks. Not for use on sod farms. For control of eriophyid mites, apply with a surfactant.
TALSTAR S SELECT	0.25–0.5 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For use on golf courses or sod farms only. For control of eriophyid mites, apply with a surfactant.
WISDOM FLOWABLE	0.23–0.46 oz./1000 sq.ft.	
chlorpyrifos		
CHLORPYRIFOS SPC 4	0.75 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For turf uses around industrial buildings and golf courses.
DURSBAN 50 W	2 lb./A	RESTRICTED USE insecticide. Sod farm use only.
HATCHET	0.75 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide
deltamethrin		
DELTAGARD G	2–3 lb./1000 sq.ft.	Apply only outdoors to turf on lawns and grounds. Not for use on sod farms or golf courses.
lambda-cyhalothrin		
AVESTA CS	3.4–7 ml/1000 sq.ft.	Not for use on golf courses or sod farms.
DEMAND CS	3.4–7 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND EZ	13.6–28 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND G	2–3 lb./1000 sq.ft.	Not for use on golf courses or sod farms.
PATROL	3.4–7 ml/1000 sq.ft.	For use on lawns and athletic fields.
SCIMITAR CS	3.4–7 ml/1000 sq.ft.	For use on lawns and athletic fields.
SCIMITAR GC	3.4–7 ml/1000 sq.ft.	RESTRICTED USE insecticide.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
TURF MITES (cont.)		
permethrin		
PERMETROL GRANULES	2–3 lb./1000 sq.ft.	Apply outdoors to lawns for control of bermudagrass mites and clover mites.
zeta cypermethrin + bifenthrin + imidacloprid		
TRIPLE CROWN GOLF	2.3–0.46 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For control of eriophyrid mites, apply with a surfactant. Not for use on sod farms.
TRIPLE CROWN T&O	0.23–0.46 fl.oz./1000 sq.ft.	For control of eriophyid mites, apply with a surfactant. Not for use on sod farms or golf courses.
WHITE GRUBS		
bifenthrin+zeta cypermethrin + imidacloprid		
TRIPLE CROWN GOLF	0.46–0.80 fl.oz./1000sq.ft. or 20–35 fl.oz./A	For use on golf courses.
TRIPLE CROWN T&O	0.46–0.80 fl.oz./1000sq.ft. or 20–35 fl.oz./A	For use on lawns and landscaped areas around residential, institutional, public, commercial, and industrial buildings, parks, recreational areas, and athletic fields.
carbaryl		
SEVIN SL	8 qt./A or 6 fl.oz./1000 sq.ft.	For agricultural or commercial use only. For use on turfgrass on golf courses, sports fields, domestic and commercial lawns, cemeteries, parks, campsites, and recreational areas. Do not allow public use of treated areas during applications or until sprays have dried. Irrigate prior to application. Do not irrigate within 24 hours following application.
chlorantraniliprole		
ACELEPRYN	8–16 fl.oz./A or 0.184–0.367 fl.oz./1000 sq.ft.	Use on landscape and recreational turfgrass, golf courses, and sod farms. Irrigate immediately after treatment.
ACELEPRYN GRANULAR	50–100 lb./A or 1.15–2.3 lb./1000 sq.ft.	Use on landscape and recreational turfgrass, golf courses, and sod farms. Irrigate immediately after treatment.
chlorpyrifos		
CHLORPYRIFOS SPC 4	1.5–3 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. For turf uses around industrial buildings and golf courses.
DURSBAN 50 W	1.5–3 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. Sod farm use only. Minimum of 50 gallons of water per acre.
HATCHET	1.5–3 fl.oz./1000 sq.ft.	RESTRICTED USE insecticide. Apply to turf grown for sod only through high-pressure injection or other subsurface application.
clothianidin		
ALOFT GC (+ BIFENTHRIN)	1.8–3.6 lb./1000 sq.ft.	RESTRICTED USE insecticide.
ALOFT LC SC (+ BIFENTHRIN)	0.27–0.54 fl.oz./1000 sq.ft.	Not for use on golf courses or sod farms.
ARENA 50 WDG	12.8 oz./A	For use on grass grown in industrial, commercial, and residential landscapes including athletic fields, cemeteries, sod farms, golf courses, home lawns, parks, and playgrounds. Irrigate after application. Suppression only.
ARENA 0.25 G	160 lb./A	For use on grass grown in industrial, commercial, and residential landscapes including athletic fields, cemeteries, sod farms, golf courses, home lawns, parks, and playgrounds. Irrigate after application.
cyantraniliprole		
FERENCE	0.184–0.367 fl.oz./1000 sq.ft. or 8–16 fl.oz./A	For use on landscape and recreational turfgrass including golf courses and sod farms.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
WHITE GRUBS (cont.)		
dinotefuran		
ZYLAM 20SG	2.7 lb./A or 1 oz./1000 sq.ft.	For use on outdoor residential, recreational, and commercial turfgrass. For optimum control make application prior to or during egg hatch. Irrigate within 24 hours after application.
ZYLAM LIQUID	1.8 oz./1000 sq.ft. or 79 fl.oz./A	For insect control in residential, recreational, and commercial turfgrass. Make application prior to or during egg hatch. Provides suppression of white grubs.
imidacloprid		
MALLET 0.5 G	1.8 lb./1000 sq.ft.	Make the application prior to egg hatch. Not for use on sod farms.
MALLET 2F	0.46–0.6 fl.oz. (14–17 ml)/1000 sq.ft.	Make the application prior to egg hatch.
MALLET 75 WSP	1 packet (1.6 oz.)/8250 sq.ft.	Make the application before or during peak egg hatch. Not for use on sod farms.
MERIT 75 WSP	1.6 oz./8250 sq.ft.	For insect control in turfgrass including sod farms. For use on outdoor residential, recreational, and commercial turfgrass. Make application prior to or during the peak egg hatch period. Irrigate within 24 hours after application.
MERIT 75 WP	8.6 oz./A	For insect control in turfgrass including sod farms. Make application prior to or during the peak egg hatch period. Irrigate within 24 hours after application.
MERIT 2F	1.6 pt./A or 0.6 fl.oz./1000 sq.ft.	For insect control in turfgrass including sod farms. Make application prior to or during the peak egg hatch period. Irrigate within 24 hours after application.
MERIT 0.5G	80 lb./A or 1.8 lb./1000 sq.ft.	For systemic insect control in turfgrass (home lawns, golf courses, cemeteries, parks, playgrounds, and athletic fields). NOT for use on sod farms. Make applications prior to or during the peak egg hatch period. Irrigate within 24 hours after application.
lambda-cyhalothrin		
AVESTA CS	7 ml/1000 sq.ft.	Suppression only. Not for use on golf courses or sod farms.
PATROL	7 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND CS	7 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND EZ	28 ml/1000 sq.ft.	For use on lawns and athletic fields.
DEMAND G	3–4 lb./1000 sq.ft.	Not for use on golf courses or sod farms.
SCIMITAR CS	7 ml/1000 sq.ft.	For use on lawns and athletic fields.
SCIMITAR GC	7 ml/1000 sq.ft.	RESTRICTED USE insecticide.
thiamethoxam		
CARAVAN G (+ FUNGICIDE)	2–2.8 lb./1000 sq.ft.	Apply when young nymphs are first observed. Not for use on sod farms.
MERIDIAN 0.33G	7–9 lb./5000 sq.ft. or 60–80 lb./A	For use on turfgrasses on golf courses, residential lawns and commercial grounds (includes sod farms, playgrounds, and athletic fields). Make application from egg hatch to second instar. Irrigate after application.
MERIDIAN 25WG	12.7–17 oz./A	For use on turfgrasses on golf courses, residential lawns and commercial grounds. For optimum control treat from peak flight to peak egg hatch. Irrigate after application.
TANDEM (+ LAMBDA CYHALOTHRIN)	Make a single application of 0.6 fl.oz. (19 ml)/1000 sq.ft. or make two applications of 0.3 fl.oz./1000 sq.ft. on a 3- to 5-week interval.	Apply when insects are first observed. Repeat applications on a 3- to 5-week interval to obtain control. Not for use on golf courses or sod farms.

Commercial Turf Insect Control		
Insecticide and Formulation	Rate	Comments
WHITE GRUBS (cont.)		
trichlorfon		
DYLOX 420 SL	6.9 oz./1000 sq.ft. or 300 fl.oz./A	For use on landscape and recreational turf and golf courses and residential turf. Irrigate after application and moisten the top inch of soil. Under dry conditions where thatch is present, water also prior to application.
DYLOX 6.2 G	3 lb./1000 sq.ft. or 130 lb./A	Can be used on golf courses. Do not apply within 25 feet of surface waters. Not for use on turf being grown for sale or other commercial use as sod. Irrigate following application.

Commercial Turf and Lawns: Insect Control Recommendations prepared by Tim Reed, Extension Entomologist, Alabama Cooperative Extension System, Alabama A&M University and Auburn University; David Held, Associate Professor, Department of Entomology and Plant Pathology, Auburn University; and Lawrence Graham, Research Fellow, Department of Entomology and Plant Pathology, Auburn University.

FOR MORE INFORMATION on pesticides, pesticide safety, or submitting samples for analysis, see the following publications in the IPM series: IPM 1293, "Safety." Safety contact information; worker protection standards; the safe use, handling, and storage of pesticides
IPM 1294, "Submitting Samples." Procedures for submitting samples for diagnosis, analysis, and identification
IPM 1295, "General Pesticide Information." Federal and state restricted use pesticide lists; pesticides and water quality
IPM 1317, "Appendix." Pesticide guidelines for agronomic crops, including preharvest intervals; rain-free requirements; grazing restrictions; crop rotation guidelines; and the names, classifications, and toxicities of pesticides.



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For more information, contact your county Extension office. Visit www.aces.edu/directory.

Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency or the Alabama Department of Agriculture and Industries. If a registration is changed or canceled, the rate listed here is no longer recommended. Before you apply **any** pesticide, check with your county Extension agent for the latest information.

Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

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