

TURF

HOME TURF INSECT CONTROL

Will Hudson, Extension Entomologist

NOTE: There is increasing concern about the health of pollinator populations, especially honeybees and other bees. Flowering plants in the landscape, including flowering weeds and wildflowers, are important sources of food for these very beneficial insects. Care should be taken when using insecticides around any flowering plants when bees are actively foraging. Timing sprays for late afternoon and evening will minimize risks from broad-spectrum contact insecticides (pyrethroids, carbaryl, etc.). Under some circumstances, systemic insecticides like imidacloprid and dinotefuran may be translocated to the blooms and picked up in nectar and pollen. Avoid spraying turf when flowering weeds or clover are in bloom. Mowing to remove the blooms before treating will greatly reduce risks associated with these materials. **Follow all label directions carefully.**

PEST	INSECTICIDE AND FORMULATION	AMOUNT PER 1,000 SQ FT*	REMARKS AND PRECAUTIONS
Ants (also see Imported fire ants)	Various pyrethroids		See note below.
Armyworms, cutworms, sod webworms	<i>Bacillus thuringiensis</i> Dipel WP Various pyrethroids	3/4-1 1/2 oz	Apply as a coarse spray in sufficient water for good coverage. Repeat as needed. See note below.
	<i>carbaryl</i> Sevin 50WP	6 1/2 oz	
	<i>trichlorfon</i> Bayer Advanced		
Chinch bugs	<i>bifenthrin</i>	See label.	Apply as a coarse spray in 4-5 gal water/1000 sq ft. Irrigation of lawn prior to application will give better control.
	<i>carbaryl</i> Sevin, etc.		
	<i>cyfluthrin</i> Bayer Advanced Lawn and Garden Various pyrethroids	3 fl oz/gal	
Digger wasps, earwigs, sowbugs	<i>carbaryl</i> Sevin 50WP Various pyrethroids	6 1/2 oz	
Ground pearls	All suggested practices regarding fertilization, watering, mowing, etc., should be carried out to keep grass growing ahead of damage. At the present time, there is no practical or effective pesticide treatment.		
Imported fire ant	INDIVIDUAL MOUND TREATMENTS		Mix with 2 gal water. Sprinkle the entire amount on and around one mound. Do not disturb mound during treatment.
	<i>acephate</i> Orthene TTO	1 1/2 Tbsp	
	<i>carbaryl</i> Sevin 50WP Various pyrethroids	4 oz	
	<i>acephate</i> Orthene TTO	See label. 2 tsp/mound	Dust evenly over top of mound. Do not water in.
	BAIT TREATMENTS		Fire ant bait should be used at 1-1 1/2 lb/A. Bait should be used as soon as possible after opening package. Apply baits when ants are actively foraging for food. Follow label directions.
	Amdro B Ascend or Varsity Distance Fire Ant Bait, Spectracide, Once 'n' Done Extinguish		
	BROADCAST TREATMENTS		See note below.
<i>bifenthrin</i> Talstar, others Various pyrethroids	Follow label.		
Millipedes	<i>carbaryl</i> Sevin 50WP Various pyrethroids	6 oz	Apply to turf 6-10 ft around building to provide a barrier treatment. Water thoroughly after application of granules. See note below.

NOTE: A number of pyrethroid materials are available in a variety of home formulations for use as broad-spectrum contact insecticides. Active ingredients include bifenthrin, cyfluthrin, cypermethrin, deltamethrin, lambda-cyhalothin, permethrin and tralomethrin. Active ingredients are listed on the label.

Most of the materials listed in the Commercial Landscape Insect Control section of this handbook are not Restricted Use Pesticides, and so are available for home use. They are not marketed for homes, in small quantities at retail garden centers, but they could provide options for some homes. Consult your county Cooperative Extension Agent for advice on alternatives.

*Unless otherwise specified, mix with 6 gal of water/1000 sq ft.

HOME TURF INSECT CONTROL

PEST	INSECTICIDE AND FORMULATION	AMOUNT PER 1,000 SQ FT*	REMARKS AND PRECAUTIONS
Mole crickets	<i>bifenthrin</i>	See label.	
	<i>carbaryl</i> Sevin 20B	2-4 oz	Water lawn before applying bait if soil is dry, but do not apply bait until grass dries.
	<i>imidacloprid</i> Bayer Advanced Lawn Product	2.87 lb	
Spittlebugs	Various pyrethroids		Cut grass to its recommended height and remove clippings prior to application. Various pyrethroids may also provide some control. See note below.
White grubs (such as Japanese beetle larva, European chafer, Southern chafer, Billbugs)	<i>carbaryl</i> Sevin, other names		Many brands and formulations are available.
	<i>dinotefuran</i> Safari 20SG by Green Light		
	<i>halofenozide</i> Grub-B-Gon	4-6 oz	For Green June beetle only. Apply as directed on label. Identification of pest grub species is important for effective control recommendations. Consult your local County Extension Agent.
	<i>imidacloprid</i>		Many brands and formulations are available.
	<i>trichlorfon</i> Bayer Advanced		Water lawn before application of any control material. Water thoroughly following insecticide application.

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HOME TURF DISEASE CONTROL

Elizabeth Little, Extension Home IPM Specialist

Proper management is of utmost importance in preventing turf disease. Most of the time, culture and environment are the key reasons diseases develop, since potential turf pathogens are virtually always present. Disease problems are encouraged by improper watering, improper fertilization, nutrient deficiencies, excessive thatch, and improper mowing. Effective disease management centers on avoiding these problems through sound turf management and prevention of plant stress. In most cases, presence of a disease indicates an underlying cultural and/or environmental problem that needs to be addressed. Fungicides are not always necessary and when used should be part of a total management program. Follow label recommendations for rates and safety precautions when using all pesticides.

BROWN/LARGE PATCH (*Rhizoctonia solani*)

DOLLAR SPOT (*Sclerotinia homeocarpa*)

Management Tips:

- Use low to moderate amounts of nitrogen, moderate amounts of phosphorous and moderate to high amounts of potash.
- Avoid nitrogen applications when the disease is active.
- Increase the height of cut.
- Increase air circulation.
- Minimize the amount of shade.
- Irrigate turf early in the day.
- Improve the drainage of the turf.
- Reduce thatch.
- Remove dew from the turf early in the day (drag a hose over the turf).
- Warm season grasses – FALL preventative applications are BEST/MOST EFFECTIVE (Sept-Oct), with a follow-up SPRING application.

PESTICIDE	RATE	REMARKS AND PRECAUTIONS
<i>captan</i> Hi-Yield Captan Fungicide 50% WP	Use 5 tsp/gal water for Brown Patch.	Apply 1 gal/100 sq ft. Begin application when new growth starts in the spring. Do NOT exceed 2 applications/year.
<i>maneb, mancozeb</i> Hi-Yield Maneb Lawn & Garden	See individual product labels.	Apply every 7-14 days as needed.
<i>myclobutanol</i> Immunox Lawn Disease Control - RTU, Concentrate, and Granules	4-8 lbs/1000 sq ft.	Apply every 14-28 days as needed. Rotate with other chemicals to avoid resistance problems.
<i>PCNB</i> Terraclor 75WP, Hi-Yield Terraclor Granular Fungicide, Hi-Yield Turf & Ornamental Fungicide containing 10% PCNB, Hi-Yield PCNB Granular Fungicide	Brown Patch: 16 oz/1000 sq ft in 10-15 gal of water for warm season turfs. 3-4 oz/1000 sq ft in 3-6 gal of water for cool season turfs. Dollar Spot: 7-10 oz/1000 sq ft in 5-10 gal of water.	Treated areas should be watered following application to move material to soil. Caution on cool season turfs for phytotoxicity. Re-treat in 3-4 weeks if disease reappears.
<i>thiophanate methyl</i> Cleary's 3336, Scotts Lawn Fungus Control	Wettable powder (50%): 2 oz/3-5 gal water/1000 sq ft. Flowable (46.2%): 1-2 oz/1000 sq ft.	Apply every 7-14 days as needed.

HOME TURF DISEASE CONTROL

FADING OUT (*Curvularia* sp.)

MELTING OUT (*Helminthosporium* sp.)

LEAF SPOTS, RUST, ANTHRACNOSE

Management Tips:

- Increase the height of cut.
- Reduce turf stress by using lightweight equipment.
- Increase air circulation to speed turf's drying process.
- Avoid application of high rates of water-soluble nitrogen in the spring.
- Minimize the amount of shade.
- Irrigate turf deeply and as infrequently as possible.
- Reduce thatch in the early spring or fall for cool-season turfgrass and in the summer for warm-season turfgrass.

PESTICIDE	RATE	REMARKS AND PRECAUTIONS
<i>maneb, mancozeb</i> Hi-Yield Maneb Lawn & Garden	See individual product labels.	Apply every 7-14 days as needed.
<i>myclobutanol</i> Immunox Lawn Disease Control-RTU, Concentrate, and Granules	4 lb/1000 sq ft.	Apply every 14-28 days as needed. Rotate with other chemicals to avoid resistance problems.
<i>PCNB</i> Terraclor 75WP, Hi-Yield Terraclor Granular Fungicide, Hi-Yield Turf & Ornamental Fungicide containing 10% PCNB, Hi-Yield PCNB Granular Fungicide	7-10 oz/1000 sq ft in 5-10 gallons of water.	Treated areas should be watered following application to move material into soil. Caution on cool season turfs for phytotoxicity. Re-treat in 3-4 weeks if disease reappears.
<i>thiophanate methyl</i> Cleary's 3336, Scotts Lawn Fungus Control	1-2 oz/1000 sq ft in 3-5 gallons of water (anthracnose of cool season turfs).	Apply 10-14 days as needed.

FUSARIUM (*Fusarium* sp.)

Management Tips:

- Maintain fertility balance.
- Avoid using lime. Alkaline soils enhance disease development.
- Increase air circulation to speed turf's drying process.
- Minimize the amount of shade.
- Reduce thatch.

PESTICIDE	RATE	REMARKS AND PRECAUTIONS
<i>myclobutanol</i> Immunox Lawn Disease Control Granules	4-8 lb/1000 sq ft.	Apply 14-21 days, when conditions are favorable for disease development. Rotate with other chemicals to avoid resistance problems.
<i>thiophanate methyl</i> Cleary's 3336, Scotts Lawn Fungus Control	Patch: 2oz/1000 sq ft. Repeat at 5-14 day intervals. Blight: 4-8 oz/1000 sq ft. Apply 2 applications at 10-14 day intervals.	Apply every 7-14 days as needed.

HOME TURF DISEASE CONTROL

FAIRY RING (*various fungi*)

Management Tips:

- Avoid using root zone mixes with high levels of undecomposed organic materials.
- Reduce thatch.
- Irrigate deeply.
- Use nitrogen fertilizer to mask symptoms on some types of fairy ring.
- Use soil wetting agents to help penetrate hydrophobic areas.
- NO PESTICIDES FOR HOME USE.

GRAY LEAF SPOT (*Pyricularia grisea*)

Management Tips:

- Avoid medium-to-high nitrogen levels during mid-summer.
- Irrigate turf deeply and as infrequently as possible to avoid water stress.
- Allow water to remain on leaves for only a short period of time.
- Reduce thatch.
- When possible, plant turfgrass that is resistant to gray leaf spot.
- Avoid using herbicides or plant growth regulators when disease is active

PESTICIDE	RATE	REMARKS AND PRECAUTIONS
<i>propiconazole</i> Banner Max, Bayer Advanced	Refer to label for rates (1-2 fl oz/1000 sq ft)	Local systemic; provides some control, best used in rotation or tank mixed with other chemistries.
<i>thiophanate methyl</i> Cleary's 3336	Refer to label for rates (1-2 fl oz/1000 sq ft)	Local systemic; provides some control, best used in rotation or tank mixed with other chemistries.

PYTHIUM BLIGHTS

PYTHIUM ROOT ROTS

(*Pythium sp.*)

Management Tips for Pythium Blight:

- Avoid mowing wet turf when temperature is over 70°F to minimize spreading the disease.
- Reduce thatch.
- Apply less than ½ pound of nitrogen per 1000 square feet per month during hot weather.
- Increase air circulation to speed the drying process of the turf.
- Minimize the amount of shade.
- Irrigate turf early in the day.
- Improve the drainage of the turf.
- Irrigate turf deeply and as infrequently as possible.

Management Tips for Pythium Root Rot:

- Increase the height of cut.
- Apply optimum amounts of nitrogen, phosphorous and potash.
- Reduce mowing frequency and use lightweight mowers.
- Avoid overwatering.
- Apply low amounts of nitrogen in the spring when roots are forming.
- Minimize the amount of shade.
- Improve the drainage of the turf.
- Reduce soil compaction through aerification by using lightweight equipment.

PESTICIDE	RATE	REMARKS AND PRECAUTIONS
<i>maneb</i> , <i>mancozeb</i> Hi-Yield Maneb Lawn & Garden	See individual product labels.	Apply every 5 days as needed.
<i>phosphorous acid</i> Monterey Agri-Fos, Helena ProPhyt	5-10 oz/1000 sq ft	Every 14-21 days as needed.

HOME TURF DISEASE CONTROL

SPRING DEAD SPOT (*Leptosphaeria*)

Management Tips:

- Avoid late-summer or fall applications of nitrogen fertilizers which may enhance disease severity.
- Use ammonium sources of nitrogen for fertilizer from spring through early August.
- Control weeds in affected turf to enhance recovery from spring dead spot.
- Apply moderate to high levels of phosphorous, potash, and minor elements.
- Improve drainage of turf.
- Reduce thatch.
- Use preventive fungicides applications in late September and October.

PESTICIDE	RATE	REMARKS AND PRECAUTIONS
<i>myclobutanil</i> Spectracide Immunox Lawn Disease Control	See label.	Start treating when grass begins to turn green in spring or when signs of disease are first noticed.

TAKE-ALL PATCH (*Gauemannomyces graminis*)

TAKE-ALL ROOT ROT

BERMUDAGRASS DECLINE

Management Tips:

- Maintain soil pH below 6.5, preferably between 5.5 and 6.0.
- Manganese deficiency enhances development of take-all patch. Supplemental applications of this in fall or spring should reduce disease severity (rate of 2 lb/A).
- Avoid excessive irrigation and nitrogen applications.
- Improve surface and subsurface drainage.
- Reduce thatch.
- Aerate the soil.
- Application of sphagnum peat moss (3.8 cu ft/1000 sq ft).
- Use preventive fungicides (in fall, prior to dormancy, and early spring). FALL FUNGICIDES (Sept-Oct for Warm Season grasses) and follow-up with early spring application—most effective. Summer applications NOT effective.

PESTICIDE	RATE	REMARKS AND PRECAUTIONS
<i>myclobutanil</i> Spectracide Immunox Lawn Disease Control-RTU, Concentrate, and Granules; Green light Fung-Away Systemic Granules	8 lb/1000 sq ft.	Spring/Fall: 28 day intervals. Optimum disease control is achieved when the product is applied preventively. To reduce the severity of take-all, make 1-2 applications in Sept/Oct when night temperatures drop below 55°F and 1-2 applications in the spring.
<i>propiconazole</i> Banner Max, Bayer Advanced	Refer to label for rates (1-2 fl oz/1000 sq ft)	Local systemic; provides some control, best used in rotation or tank mixed with other chemistries.

NEMATODES

Management tips:

- Optimize growing conditions (pH, nutrient levels).
- If practical, top dress with high quality compost (1/4 inch depth)
- If a nematode problem is suspected, contact your Cooperative Extension office to have a soil sample sent to the UGA nematode lab.

PESTICIDE	RATE	REMARKS AND PRECAUTIONS
<i>chitin</i> ClandoSan, Shrimp shell meal	Depends upon soil analysis.	Start treating when grass begins to turn green in spring. A single annual application is usually sufficient for nematode control. Chitin is a non-chemical soil amendment made from crustacean shells that promotes growth of beneficial soil microorganisms, which in turn feed on nematodes, whose bodies are made of chitin. This may not be practical for large turf areas.

TURFGRASS WEED CONTROL FOR HOMES

Patrick McCullough, Extension Agronomist – Weed Science

The herbicides recommended in this section are available in small containers at most lawn and garden, hardware and discount stores. The herbicides listed in the section entitled “TURFGRASS WEED CONTROL RECOMMENDATIONS FOR PROFESSIONAL MANAGERS” are not usually available in small containers at stores where homeowners purchase lawn and garden pesticides. For more information, see “Weed Control in Home Lawns” (UGA Extension Bulletin #978) at extension.uga.edu/publications.

TURFGRASSES	HERBICIDE	AMOUNT OF PRODUCT PER 1,000 SQ FT	REMARKS AND PRECAUTIONS
PREEMERGENCE HERBICIDES: Applications must be made prior to weed emergence or poor control will result. Recommended dates of application for crabgrass and other annual grasses are February 15 - March 5 in South Georgia and March 1-20 in North Georgia. Recommended dates for annual weeds are September 1-15 in North Georgia and October 1-15 in South Georgia.			
PREEMERGENCE (Established Grasses)			
Carpetgrass, centipede grass, St. Augustine, zoysiagrass	<i>atrazine</i> Bonus S	4.3 lb ¹	Atrazine controls annual bluegrass and a wide range of broadleaf weeds. These products are formulated on a dry fertilizer carrier. DO NOT apply to newly seeded carpetgrass or centipede grass until after two mowings. DO NOT sprig for one month or seed for six months after application. Atrazine will provide preemergence and postemergence control of many annual weeds. These products are not Restricted Use Herbicides.
	Southern Lawn Fertilizer plus Weed Control	5 lb ¹	
Centipede grass, St. Augustine	<i>atrazine</i> Hi-Yield Atrazine 4% Image for St. Augustine & Centipede grass 4%	8 fl oz 8 fl oz	Controls a wide range of broadleaf weeds, sandspur (sandbur) and suppresses crabgrass. May be applied in all 12 months for postemergence control of various weeds. Use in the fall or spring for the preemergence control of a wide range of annual grass and broadleaf weeds. Delay application to newly sodded or sprigged lawns until the sprigs have rooted and are actively growing. May be applied up to 2 times per year.
Ky. Bluegrass, bermudagrass, centipede grass, tall fescue, zoysiagrass, St. Augustine	<i>benefin</i> Balan 2.5G Crabgrass Preventer 2.5G Crabgrass Preventer 1.72G	1.5-3 lb ¹ 1.8-2.8 lb ¹ 2-2.7 lb ¹	Controls annual grasses and certain annual broadleaf weeds. An additional application may be made 8 weeks after the initial treatment for continued weed control. DO NOT apply to newly sprigged grass until well established. DO NOT make a spring application to fall planted turfgrass. Delay reseeding for 6 weeks after application for the low rate, and for 12-16 weeks at the high rate. Benefin is available on a dry fertilizer carrier under various trade names.
Bermudagrass, centipede grass, tall fescue, St. Augustine, zoysiagrass,	<i>benefin + oryzalin</i> XL 2G	2.5-5 lb ¹	Controls annual grasses and certain annual broadleaf weeds. DO NOT apply to newly sprigged grasses until well established. DO NOT make a spring application to fall planted St. Augustine turfgrasses. Delay reseeding for 6 weeks (low rate) and for 12-16 weeks (high rate).
Ky. Bluegrass, bermudagrass, centipede grass, tall fescue, St. Augustine, zoysiagrass,	<i>benefin + trifluralin</i> Team 2G	2.5-3.5 lb ¹	Controls annual grasses and certain annual broadleaf weeds. DO NOT make a spring application to fall planted turfgrasses. DO NOT apply to newly sprigged grasses until full soil coverage is achieved. Under conditions of heavy goosegrass or annual bluegrass infestations, a second application should be made 10 weeks after the initial application. Delay reseeding for 8 weeks (low rate) to 12 weeks (high rate) after application.
Ky. Bluegrass, bermudagrass, centipede grass, tall fescue, St. Augustine, zoysiagrass	<i>dithiopyr</i> Hi-Yield Turf & Ornamental Weed & Grass Stopper 0.125GR, Others	4.6-9.2 lb ¹	Controls annual grasses and certain annual broadleaf weeds. A sequential application of 4.6 lb followed by a second application of 4.6 lb may improve control of annual grasses. Apply the second treatment 8 weeks after the first application. DO NOT apply to newly sprigged grasses until full soil coverage is achieved. Delay reseeding for 10 weeks (low rate) to 16 weeks (high rate) after application.

¹ Apply granules directly to the soil surface.

TURFGRASS WEED CONTROL FOR HOMES

TURFGRASSES	HERBICIDE	AMOUNT OF PRODUCT PER 1,000 SQ FT	REMARKS AND PRECAUTIONS
PREEMERGENCE (Established Grasses) (continued)			
Bermudagrass centipedegrass, tall, fescue, zoysiagrass, St. Augustine	<i>oryzalin</i> Surflan 4AS	1-1.5 fl oz	Controls annual grasses and certain annual broadleaf weeds. Apply 1.5 oz/1,000 sq ft for summer annual grass control, or apply 1 oz/1,000 sq ft and apply an additional 1 oz/1,000 sq ft 8-10 weeks after the initial application. Split applications are recommended for improved goosegrass control. Use the low rate for annual bluegrass control. DO NOT apply to newly sprigged grasses until well established. DO NOT make a spring application to fall planted turfgrasses. Surflan is recommended for use on healthy, established turf. Delay reseeding for 3-4 months after applications.
Ky. Bluegrass, bermudagrass, centipedegrass, tall fescue, zoysiagrass, St. Augustine	<i>pendimethalin</i> Halts 1.71G, Others	2 lb ¹	Controls annual grasses and certain annual broadleaf weeds. DO NOT use on newly sprigged grasses. On newly-seeded lawns, delay the application until after the fourth mowing. An additional application may be made 8 weeks after the first application to improve control of crabgrass and goosegrass. NOT recommend for turfgrass that has been severely thinned due to winter stress. DO NOT reseed within 4 months of application. Pendimethalin is available on a dry fertilizer carrier under various trade names.
POSTMERGENCE (Established Grasses)			
Ky. Bluegrass, tall fescue, zoysiagrass, bermudagrass	<i>2,4-D + MCPP + dicamba</i> 33 Plus Ace Lawn Weed Killer Wipe-out Trimec Southern Weed Killer for Lawns, Others	2.67 fl oz 4 fl oz 5 fl oz 4 fl oz 4 fl oz	Controls a broader spectrum of weeds than 2,4-D alone. Newly seeded lawns may be treated after a minimum of 3 mowings. Use one-half rates and spot treatments to minimize injury on centipedegrass and St. Augustinegrass. Applications during spring transition (green-up) should be avoided unless temporary (2-4 weeks) delays in green-up are acceptable. DO NOT apply at air temperatures >90°F.
Ky. Bluegrass, bermudagrass, tall fescue, zoysiagrass	<i>2,4-D + quinclorac + dicamba</i> All-in-One Lawn Weed and Crabgrass Killer Weed-B-Gon Max Plus Crabgrass Control Concentrate	Product is designed to be applied by connecting bottle to garden hose. One quart will treat 5,000 sq ft. 6 fl oz	Controls both annual broadleaf weeds and crabgrass. Apply 1-3 days after mowing. DO NOT mow for 1-2 days after spraying. DO NOT apply at air temperatures >85° F. Not recommended for use on centipedegrass, carpetgrass and St. Augustinegrass. A repeat application at 14 days after the first application may be necessary to control certain perennial broadleaf weeds and annual grasses. Newly seeded lawns may be treated after a minimum of 4 mowings. DO NOT reseed for 4 weeks after application.
Centipedegrass, St. Augustine	<i>atrazine</i> Hi-Yield Atrazine 4% Image for St. Augustine & Centipedegrass 4% Weed-B-Gon Spot Weed Killer for St. Augustine 0.6% GR	8 fl oz 8 fl oz Spot treatment.	Controls a wide range of broadleaf weeds and sandspur (sandbur) and suppresses crabgrass. May be applied in all 12 months for postemergence control of various weeds. Use in the fall or spring for the preemergence control of a wide range of annual grass and broadleaf weeds. Delay application to newly sodded or sprigged lawns until the sprigs have rooted and are actively growing. May be applied up to two times per year. Weed-B-Gon Spot Weed Killer for St. Augustinegrass is a granular product used as a spot treatment (1 Tbsp/4 sq ft) to control broadleaf weeds in centipedegrass, carpetgrass, St. Augustinegrass and zoysia. DO NOT overseed 4 months before or 6 months after treatment. DO NOT apply within the active zone of azaleas, ammelias, boxwoods, etc. DO NOT apply to any cool-season turfgrass or severe injury will occur.
Ky. Bluegrass, bermudagrass, centipedegrass, tall fescue, St. Augustinegrass zoysiagrass	<i>bentazon</i> Basagran T/O 4 lbs/gal Hi-Yield Basagran 4 lbs/gal.	0.75-0.5 fl oz	Apply bentazon to emerged yellow nutsedge that is actively growing and under good soil moisture conditions. Follow 10-14 days later with an additional application. Crop oil concentrate at 0.75 fl oz/1,000 sq ft should be added to the spray mix. DO NOT mow 3 days before or after application. DO NOT apply to newly seeded or newly sprigged turfgrass until the seedlings or sprigs are well established.

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TURFGRASS WEED CONTROL FOR HOMES

TURFGRASSES	HERBICIDE	AMOUNT OF PRODUCT PER 1,000 SQ FT	REMARKS AND PRECAUTIONS
POSTMERGENCE (Established Grasses) (continued)			
Ky. Bluegrass, tall fescue, bermudagrass, zoysiagrass	<i>carfentrazone</i> + 2,4-D + MCPP + <i>dicamba</i> SpeedZone Lawn Weed Killer	0.75-1 fl oz	Controls a wide range of broadleaf weeds, including spotted spurge. May be applied after the second mowing in newly established cool-season turfgrasses, or 4 weeks after sprigging or sodding warm-season turfgrasses. DO NOT reseed until 2 weeks after application. DO NOT apply at air temperatures > 90°F.
Ky. Bluegrass, tall fescue, zoysiagrass	<i>fenoxaprop</i> Bermudagrass Control for Lawns		Controls bermudagrass, crabgrass, Japanese stiltgrass, sandbur and numerous other grass weeds. DO NOT apply to bermudagrass, centipedegrass or St. Augustinegrass lawns. Apply at monthly intervals during the summer months to suppress/control bermudagrass. Plan on doing this program annually for at least two years. Annual grass weeds are usually controlled with a single application.
bermudagrass, centipedegrass, St. Augustine, zoysiagrass	<i>imazaquin</i> Image Consumer Concentrate 0.3 lb/gal	3.75 fl oz	Controls nutsedges, wild garlic and selected broadleaf weeds. DO NOT apply when turfgrass is emerging from winter dormancy. DO NOT apply to newly planted or sprigged turfgrasses. This product is not recommended for use on St. Augustinegrass during the winter months.
Ky. Bluegrass, bermudagrass, centipedegrass, tall fescue, St. Augustine, zoysiagrass,	<i>iron sulfate</i> Scotts Turf Builder Fertilizer with Moss Control	See product label.	This product contains iron sulfate formulated on a 22-2-2 fertilizer carrier. One bag will treat up 5,000 sq ft. Apply in winter or spring months to moist turf when moss is actively growing. This product may cause turfgrass foliage to temporarily blacken. Subsequent mowing will alleviate this condition. DO NOT apply to a newly seeded or sodded lawn until it has been mowed four times. Brush or rinse particles from cement, stone, clothing, or shoes to prevent staining.
Ky. Bluegrass, bermudagrass, centipedegrass, tall fescue, St. Augustine, zoysiagrass,	<i>potassium soap of fatty acids</i> Bayer 2-in-1 Moss & Algae Killer	Product is designed to be applied by connecting bottle to garden hose.	Controls moss and algae in established lawns. Rinse treated areas with water 15-30 minutes after treatment to lower risk of turfgrass injury. DO NOT heavily irrigate turf for 6 hours after treatment. For best results apply in spring or fall months. This product should not be applied at air temperatures > 85° F. Treated areas can be reseeded 5 days after treatment.
centipedegrass, fine fescue	<i>sethoxydim</i> Segment 1 lb/gal	0.5-0.75 fl oz	Apply only to centipedegrass and fine fescues (creeping red, chewing, hard fescue). Other turfgrasses will be severely injured by this herbicide. Controls annual grasses and suppresses bahiagrass growth. Apply no sooner than 3 weeks after spring green-up. May be applied at the low rate to seedling centipedegrass. DO NOT mow 7 days prior to or after application. Two applications per season may be used in established centipede. For bahiagrass suppression, repeat treatment 10-14 days after the first application.
Ky. Bluegrass, tall fescue, zoysiagrass	<i>triclopyr</i> Weed-B-Gon Chickweed, Clover and Oxalis Killer 8%	2.5 fl oz	Controls numerous broadleaf weeds. Particularly effective for control of violets and ground ivy. Apply twice, at an interval of 3-4 weeks for improved control. NOT recommended for use on bermudagrass, centipedegrass and St. Augustinegrass. Newly seeded lawns may be treated after a minimum of 3 mowings. DO NOT reseed for 3 weeks after application.

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TURFGRASS HERBICIDES COMMONLY FOUND IN RETAIL LAWN AND GARDEN STORES/CENTERS

Patrick E. McCullough, Extension Agronomist – Weed Science

I. Preemergence Herbicides

TRADE NAME	ACTIVE INGREDIENT
Balan	<i>benefin</i>
Bonus S	<i>atrazine</i>
Southern Lawn Fertilizer plus Weed Control	<i>atrazine</i>
Gallery	<i>isoxaben</i>
Green Light Amaze	<i>benefin + oryzalin</i>
Green Light Betasan	<i>bensulide</i>
Halts	<i>pendimethalin</i>
Hi-Yield Crabgrass Preventer	<i>benefin + trifluralin</i>
Surflan	<i>oryzalin</i>
StaGreen CrabEx	<i>dithiopyr</i>
Hi-Yield Turf & Ornamental Weed & Grass Stopper	<i>dithiopyr</i>
StaGreen Crabgrass Preventer	<i>proflam</i>
Lawn Fertilizer plus Weed Control	<i>proflam</i>
StaGreen Crabgrass Preventer with Fertilizer	<i>benefin + trifluralin</i>
Team	<i>benefin + trifluralin</i>
XL	<i>benefin + oryzalin</i>

II. Postemergence Herbicides

TRADE NAME	ACTIVE INGREDIENT
Ace Lawn Weed Killer	<i>2,4-D + MCPP + dicamba</i>
Acme Super Chickweed Killer	<i>2,4-D + MCPP + dicamba</i>
Basagran T&O	<i>bentazon</i>
Bayer Advanced All-in-One Weed Killer	<i>MSMA + 2,4-D + MCPP + dicamba</i>
Bayer Advanced Southern Lawn Weed Killer	<i>2,4-D + MCPP + dicamba</i>
Dragon Lawn Weed Killer	<i>2,4-D + MCPP + dicamba</i>
Enforcer Weed Stop	<i>2,4-D + MCPP + dicamba</i>
Fertilome Weed Out Lawn Weed Killer	<i>2,4-D + MCPP + dicamba</i>
Green Light Wipe Out	<i>2,4-D + MCPP + dicamba</i>
Green Light Spot Weed Killer	<i>MCPA + MCPP + dicamba</i>

TURFGRASS HERBICIDES COMMONLY FOUND IN RETAIL LAWN AND GARDEN STORES/CENTERS

TRADE NAME	ACTIVE INGREDIENT
Hi-Yield Basagran	<i>bentazon</i>
Hi-Yield Atrazine	<i>atrazine</i>
Ortho Nutsedge Killer	<i>sulfentrazone</i>
Ortho Spot Weed Killer for St. Augustine Lawns	<i>atrazine</i>
Image	<i>imazaquin</i>
Image for St. Augustine and Centipede	<i>atrazine</i>
Rigo Super Lawn Weed Killer	<i>2,4-D + MCPP + dicamba</i>
Safer Weed Away	<i>2,4-D + MCPP + dicamba</i>
Sethoxydim G-Pro	<i>sethoxydim</i>
Spectrum Lawn Weed Killer 33 Plus	<i>2,4-D + MCPP + dicamba</i>
Speed Zone Lawn Weed Killer	<i>2,4-D + MCPP + dicamba + carfentrazone</i>
Spectracide Weed Stop	<i>2,4-D + MCPP + dicamba</i>
Trimec Classic	<i>2,4-D + MCPP + dicamba</i>
Trimec Southern	<i>MCPP + 2,4-D + dicamba</i>
Weed-B-Gon Chickweed, Clover & Oxalis Killer	<i>triclopyr</i>
Weed-B-Gon Max	<i>MCPA + triclopyr + dicamba</i>
Weed-B-Gon Max Plus Crabgrass Control	<i>quinclorac + MCPP + dicamba</i>

TURFGRASS WEED RESPONSE TO HERBICIDES – HOME PRODUCTS

Patrick E. McCullough, Extension Agronomist – Weed Science

	atrazine	benefin	dithiopyr	oryzalin	pendimethalin	prodiamine
Time of application	PREEMERGENCE					
PERENNIAL GRASSES AND GRASS-LIKE WEEDS						
bahiagrass	P	P	P	P	P	P
bermudagrass	P	P	P	P	P	P
dallisgrass	P	P	P	P	P	P
nutsedge, purple	P	P	P	P	P	P
nutsedge, yellow	P-F	P	P	P	P	P
tall fescue	P	P	P	P	P	P
wild garlic/onion	P	P	P	P	P	P
ANNUAL GRASSES						
annual bluegrass	E	E	G	G	G	E
crabgrass	F	E	G-E	E	E	E
crowfootgrass	P	G		G	G	
goosegrass	P	F	F	F-G	F-G	G
sandbur	F	F		G	G	
BROADLEAF WEEDS						
chamberbitter (niruri)	G					P
common chick weed	E	G	G	G	G	G
corn speedwell	E	E	G		E	P
cudweed	E	G			G	P
dandelion	F	P	P	P	P	P
dichondra	G	P	P	P	P	P
docks	G	P	P	P	P	P
Florida betony	E	P		P	P	P
ground ivy		P	P	P	P	P
henbit	E	G	G	G	G	G
hop clovers	E	P				P
knotweed	E			F	G	P
lespedeza	E		E			P
mallow		P	P	P	P	P
mock strawberry		P	P	P	P	P
mouseear chickweed		E		P	G	P
mugwort		P	P	P	P	P
mustards	E					P
parsley piert	E	P			P	P
pennywort	E	P		P	P	P
plantains	G	P	P	P	P	P
spurges	E	P	G		F	P
spurweed (burweed)	E	P				P
VA buttonweed		P	P	P	P	P
violets			P	P	P	P
white clover	F	P	P	P	P	P
yellow woodsorrel	E	P	P	F	F	P

Key to response symbols: E – Excellent control (90-100 %), G – Good control (80-89%), F – Fair control (70-79%), P – Poor control (< 70%).
A blank space indicates weed response is not known.

TURFGRASS WEED RESPONSE TO HERBICIDES – HOME PRODUCTS

Time of application	2,4-D	2,4-D + MCPP + dicamba	atrazine	bentazon	imazaquin	sulfentrazone	sethoxydim	triclopyr
	POSTEMERGENCE							
PERENNIAL GRASSES AND GRASS-LIKE WEEDS								
bahiagrass	P	P	P	P	P-F	P	F	P
bermudagrass	P	P	P	P	P	P	F	P
dallisgrass	P	P	P	P	P	P	P-F	P
nutsedge, purple	F	P	P	P	G	P	P	P
nutsedge, yellow	F	P	P	G	F-G	G	P	P
tall fescue	P	P	P-F	P	P-F	P	F	P
wild garlic/onion	G	G	P	P	E		P	P
ANNUAL GRASSES								
annual bluegrass	P	P	E	P	F-G	P	P	P
crabgrass	P	P	F	P	P	P	E	P
crowfootgrass	P	P		P	P			P
goosegrass	P	P	P	P	P	F	G	P
sandbur	P	P		P	F-G		G	P
BROADLEAF WEEDS								
chamberbitter (niruri)	P		G	P	P		P	G-E
common chick weed	P	G	E	G	E	G	P	E
corn speedwell	F	F	E	P	P	G	P	G
cudweed	G-E	E	G				P	F
dandelion	E	G	F	P		P	P	G
dichondra	G	G	E	P			P	F-G
docks	F	G	G	P			P	F-G
Florida betony	F	G	E	P			P	G
ground ivy	P-F	G		P		F	P	G
henbit	P	G	E	P		G	P	E
hop clovers	F	E	E			G	P	E
knotweed	P	G	E			G	P	F
lespedeza	P-F	G	E			P	P	G
mallow	F	G		P			P	G
mock strawberry	P	G		P			P	
mouseear chickweed	P-F	G	G	P	G		P	G
mugwort	P	F		P		G	P	P-F
mustards	E	G	E	G			P	F
parsley piert	P	G	E	G	G		P	E
pennywort	G	E	E	P			P	F
plantains	E	E	F	P		G	P	F
spurges	F	G	E	P		F-	P	F
spurweed (burweed)	G	G	E	E		G	P	F
VA buttonweed	P	F		P		P	P	P
violets	P	F	P	P			P	F-G
white clover	F	G	F-G	P	F	P	P	F-G
yellow woodsorrel	P	F	G	P		G	P	F

Key to response symbols: E – Excellent control (90-100 %), G– Good control (80-89%), F – Fair control (70-79%), P – Poor control (< 70%).

A blank space indicates weed response is not known.