

Turfgrass Weed Control for Professional Managers

Patrick E. McCullough, Extension Agronomist – Weed Science

Use Stage and Herbicide	Turfgrasses	WSSA Group	Broadcast Rate/Acre		REI	Remarks and Precautions
			Amount of Formulation	Pounds Active Ingredient		
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 bluegrass and selected winter annual weeds are September 1-15 in north Georgia and October 1-15 in south Georgia.						
atrazine (Aatrex) 4L (Aatrex) 90DG (Aatrex) 80W	bermudagrass, centipedegrass, dormant, St. Augustinegrass, zoysiagrass	5	1.0-2.0 qts. 1.1-2.2 lbs. 1.2-2.5 lbs.	1.0-2.0 1.0-2.0 1.0-2.0	See Label	Atrazine provides both preemergence and postemergence control of annual broadleaf weeds. Control of summer annual grasses is weak. Aatrex formulations are labeled for applications from October 1 to April 15. Avoid applications during green-up. For bermudagrass, atrazine should be applied only to dormant turf. DO NOT overseed 4 months before or 6 months after treatment. DO NOT apply within the active root zone of azaleas, camellias, boxwoods, etc. DO NOT apply more than 1.0 lb. ai/A on hybrid bermudagrasses. Atrazine is a Restricted Use Herbicide. Refer to atrazine-POSTEMERGENCE.
benefin (Balan) 2.5G (Other trade names)	bermudagrass, centipedegrass, Ky. bluegrass, St. Augustinegrass, tall fescue, zoysiagrass	3	80.0-120.0 lbs.	2.0-3.0	12	Controls annual grasses and selected broadleaf weeds. An additional application may be made 8 weeks after the initial treatment for continued weed control. DO NOT apply to newly sprigged grasses until these turfs are well established. DO NOT use on golf course greens. DO NOT apply Balan 2.5G in the spring to fall planted turfgrasses. Delay reseeding for 6 weeks after application for the low rate, and for 12-16 weeks at the high rate.
benefin + oryzalin (XL) 2G	bermudagrass, centipedegrass, St. Augustinegrass, tall fescue, zoysiagrass	3 + 3	100.0-150.0 lbs.	1.0-1.5 benefin + 1.0-1.5 oryzalin	24	Controls annual grasses and selected broadleaf weeds. DO NOT apply to newly sprigged grasses until well established. DO NOT apply to golf course greens. DO NOT make a spring application to fall planted turfgrasses. Delay reseeding for 6 weeks (low rate) and for 12-16 weeks (high rate) after application.
benefin + trifluralin (Team Pro) 0.86G (Team) 2G	bermudagrass, centipedegrass, Ky. bluegrass, St. Augustinegrass, tall fescue, zoysiagrass	3 + 3	174-349 lbs. 100-150 lbs.	0.75-1.5 benefin + 0.75-1.5 Trifluralin 1.3-2.0 benefin + 0.7-1.0 trifluralin	See Label	Team Pro is a dry fertilizer based product that contains 0.43% benefin and 0.43% trifluralin. The fertilizer analysis will depend upon the respective company marketing the product. Controls summer annual grasses and annual bluegrass. Split applications of 233 lbs. product/acre followed 10 weeks later by an additional 233 lbs. product/acre may also be used. DO NOT apply to newly sprigged grasses until well established. DO NOT apply to putting greens. Delay reseeding for 8 weeks (low rate) and for 12-16 weeks (high rate) after application.
bensulide (Bensumec) 4LF (Pre-San) 7G	bermudagrass, centipedegrass, Ky. bluegrass, St. Augustinegrass, tall fescue, zoysiagrass	8	1.9-3.1 gals. 107.0- 180.0 lbs.	7.5-12.5 7.5-12.5	See Label	Controls annual grasses and selected broadleaf weeds. Apply high rate in fall for annual bluegrass control. Apply a light irrigation immediately after treatment. DO NOT apply to newly sprigged grasses. Delay reseeding for 4 months after treatment. May be used on bermudagrass and bentgrass greens.

Supplemental 2(ee) label recommendations may be available for some listed pesticides. It is the end-user's responsibility to consult the manufacturer or websites like www.CDMS.net for additional recommendations.

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Preemergence Herbicides - continued						
bensulide + oxadiazon (Goosegrass/Crabgrass Control) 5.25% + 1.31% G	bermudagrass, Ky. bluegrass, tall fescue, zoysiagrass	8 + 14	115.0 lbs.	6.0 bensulide + 1.5 oxadiazon	See Label	Controls summer annual grasses. Apply a light irrigation after treatment. DO NOT use on newly sprigged grasses until well established. Delay reseeding for 5 months after treatment. Recommended for professional applicator use. May be used on bermudagrass and bentgrass greens under conditions of heavy goosegrass infestations. See label for precautions concerning use on putting greens.
dimethenamid (Tower) 6 L	bahiagrass, bermudagrass, centipedegrass, Ky. bluegrass, seashore paspalum, St. Augustinegrass, tall fescue, zoysiagrass	15	21-32 fl. oz.	1-1.5	12	Controls annual grasses and broadleaf weed control. Tower may be applied to tees; fairways, roughs, and any other maintained turf areas on golf courses (except putting greens). In a single application, DO NOT apply more than the equivalent of 32 fl. oz. of Tower per acre. For extended weed control, sequential applications can be made 5-8 weeks between applications. DO NOT apply more than 64 fl. oz./A of Tower per year. Tower may be applied in a sequential use program with other herbicides that control emerged weeds.
dimethenamid 0.75% + pendimethalin 1% (Freehand) 1.75G	bermudagrass, centipedegrass, kikuyugrass, seashore paspalum, St. Augustinegrass	15 + 3	100-200 lbs.	1.75-3.5	12	Apply for preemergence control of annual grassy weeds, annual broadleaf weeds, and sedges in established tolerant warm-season turfgrasses. Freehand may be applied to lawns, parks, golf courses, sod farms, athletic fields, and other turf areas. Do not apply more than 200 lbs./acre in a single application. Do not apply more than 400 lbs./acre per year. Do not apply to golf greens. Make initial applications when soil temperatures are 55°F or higher and delay winter overseeding for at least three months after applications. Do not apply to cool-season grasses.
dithiopyr (Dimension 1EC) (Dimension Ultra 40% WSP) (each 5.0 oz. water soluble bag contains 0.125 lb. of dithiopyr) (Dimension 2 EW)	bermudagrass, buffalograss, carpetgrass, centipedegrass, Ky. bluegrass, seashore paspalum, St. Augustinegrass, tall fescue, zoysiagrass	3	2.0 qts. 0.95 lb. 2.0 pts.	0.5 0.38 0.5	See Label	Provides preemergence control of annual grasses and certain annual broadleaf weeds. Dimension will also provide postemergence control of crabgrass (when treated prior to the tillering stage of growth). Apply as a spring or fall application. For split applications, use Dimension 1EC up to 1.5 qts./acre per application, or Dimension Ultra at 0.625 lbs./acre per application. Bermudagrass can be overseeded with perennial ryegrass 6-8 weeks after a Dimension application. For other turfgrass areas do not reseed, overseed or sprig treated areas for 2.5-4 months after treatment (see label).
flumioxazin (Sureguard) 51WDG	bermudagrass (dormant)	14	8-12 oz.	0.23-0.38	12	Provides preemergence control of annual broadleaf weeds and annual grasses including crabgrass, goosegrass, and annual bluegrass. Flumioxazin also provides postemergence control of annual bluegrass and annual broadleaf weeds. Applications should be limited to dormant bermudagrass only. Late fall applications to partially green bermudagrass can aid in transition to dormancy. Do not apply to golf greens or actively growing turfgrasses. Do not apply more than 24 oz./acre per year. The addition of a nonionic surfactant is recommended for postemergence applications.

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Preemergence Herbicides - continued						
indaziflam (Specticle Flo 0.62L) (Specticle G 0.0224%)	bahiagrass, bermudagrass, buffalograss, centipedegrass, seashore paspalum, St. Augustinegrass, zoysiagrass	29	3-10 fl. oz. 100 to 200 lbs.	0.015-0.05 0.022-0.044	12	Apply for preemergence control of annual bluegrass, crabgrass, goosegrass, annual sedges, and broadleaf weeds in warm-season grasses. Use only on established turf. Do not apply to desirable cool-season grasses, golf greens, or within 15 feet of golf greens. Indaziflam may affect sensitive grasses downslope from treated areas, do not use on slopes uphill and adjacent to bentgrass or bermudagrass golf greens. Do not apply more than 18.5 fl oz. of Specticle Flo per acre in a 12 month period. Do not exceed 6 fl oz. per acre in a single application to centipedegrass and St. Augustinegrass. Other labeled warm-season grasses may be treated with up to 10 oz. of product per acre in a single application. Do not apply more than 400 lb/acre of Specticle G per year. See label for further information before using the herbicide.
isoxaben (Gallery) 75DF	bermudagrass, buffalograss, centipedegrass, Ky. bluegrass, St. Augustinegrass, tall fescue, zoysiagrass	21	0.66-1.33 lbs.	0.5-1.0	12	Controls a broad spectrum of annual broadleaf weeds. Apply in the late summer or early spring prior to annual broadleaf weed seed germination. Established turf may be overseeded 60 days following a Gallery application. DO NOT use on putting greens.
mesotrione (Tenacity) 4.0 lbs./gal.	centipedegrass, Ky. bluegrass, St. Augustinegrass (grown for sod), tall fescue	27	4.0-8.0 fl. oz.	0.125-0.25	12	Provides preemergence control of crabgrass, yellow foxtail and certain annual broadleaf weeds such as carpetweed and chickweed sp. Tenacity may be tank-mixed with preemergence herbicides such as Barricade for extended control of crabgrass and foxtail. Tenacity may also be applied at the time of seeding Ky. bluegrass, centipedegrass, or tall fescue. It may also be applied after new seedlings have been mowed two times or 4 weeks after emergence (whichever is longer). Do not exceed 4.0 fl. oz./acre on St. Augustinegrass sod. Tenacity may cause temporary whitening of turfgrass foliage (see label). If Tenacity is tank-mixed with atrazine or simazine for use on St. Augustinegrass or centipedegrass use only 4.0 fl. oz. of Tenacity and 0.5 lbs. ai/A of either atrazine or simazine. Zoysiagrass, bermudagrass and seashore paspalum are sensitive to Tenacity. Do not use on golf course putting greens and maintain a five-foot buffer between treated areas and putting greens.
metolachlor (Pennant Magnum) 7.62 lbs./gal	bermudagrass, centipedegrass, St. Augustinegrass, zoysiagrass	15	1.3-2.6 pts.	1.25-2.5	24	Controls annual sedge, yellow nutsedge and certain annual grass weeds. Split applications at intervals of 6-8 weeks will extend control. In sod fields do not apply more than 4.2 pts. /acre per year. For other turf sites, the maximum annual rate is 2.6 pts. /acre. DO NOT use on putting greens.
oryzalin (Surflan) 4AS (Harrier) 85WDG	bermudagrass, buffalograss, centipedegrass, St. Augustinegrass, tall fescue, zoysiagrass	3	1.5-2.0 qts. 1.75-2.4 lbs.	1.5-2.0 1.5-2.0	24	Controls annual grasses and selected broadleaf weeds. Apply 2.0 qts./A for summer annual grass control, or apply 1.5 qts./A and apply an additional 1.5 qts./A 8-10 weeks after the initial application. Split applications are recommended for improved goosegrass control and for tall fescue. DO NOT apply to newly sprigged grasses until well established. DO NOT apply to golf course greens. 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 application.

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Preemergence Herbicides - continued						
oxadiazon (Ronstar) 2G (Oxadiazon) 2G	bermudagrass, buffalograss, Ky. bluegrass, seashore paspalum, St. Augustinegrass, tall fescue, zoysiagrass	14	100-200 lbs.	2.0-4.0	12	Controls annual grasses and selected broadleaf weeds. DO NOT apply more than 3.0 lbs. ai/A on St. Augustinegrass. May cause temporary discoloration of bermudagrass and St. Augustinegrass which is normally outgrown in 2-3 weeks. DO NOT apply to wet turf. Delay reseeding for 4 months after treatment. DO NOT apply to centipedegrass or golf course greens or tees. Ronstar 50WSP is labeled only on bermudagrass, St. Augustinegrass and zoysiagrass. Ronstar 2G may be used immediately prior or immediately after sprigging bermudagrass or zoysiagrass at 2.0-3.0 lbs. ai/A to control various annual weeds. Ronstar 2G may also be applied 10-14 days after sprigging seashore paspalum. Ronstar 50WSP Oxadiazon 50WSB is not labeled for use on home lawns.
(Ronstar) 50WSP (Oxadiazon) 50WSB (Starfighter) 3.17 L	bermudagrass, St. Augustinegrass, zoysiagrass		4.0-6.0 lbs. 2.5-3.8 qts.	2.0-3.0 2.0-3.0		
oxadiazon (1.0%) + proflaminate (0.2%) (Regalstar II) (Regalstar G)	bermudagrass, centipedegrass, Ky. bluegrass, St. Augustinegrass, tall fescue, zoysiagrass	14 + 3	200.00 lbs.	2.0 oxadiazon + 0.4 proflaminate	See Label	
pendimethalin (Pendulum) 2G (Pendulum) 3.3 EC (Pendulum AquaCap) 3.8 CS	bermudagrass, centipedegrass, Ky. bluegrass, St. Augustinegrass, tall fescue, zoysiagrass	3	75-150 lbs. 3.6-7.2 pts. 3.1-6.3 pts.	1.5-3.0 1.5-3.0 1.5-3.0	24	Controls annual grasses and selected broadleaf weeds. DO NOT use on newly sprigged turfgrasses. Not recommended for turfgrass that has been severely thinned due to winter stress. DO NOT reseed within 3 months of application. Use the low rate for tall fescue and KY bluegrass. The high rate may be used on warm season grasses. On newly seeded or sodded areas, delay application until after the fourth mowing. In established turfgrasses that have been reseeded, delay application until grass seedlings have been mowed 4 times. (This may be up to 3 months from the date of seeding.) Refer to label for information on split applications.
proflaminate (Barricade) 65WDG (ProClipse) 65 WDG (Cavalcade) 65 WDG (StoneWall) 65 WDG (Barricade) 4L (RegalKade) 0.5G (RegalKade) 0.37G	bermudagrass, buffalograss, centipedegrass, Ky. bluegrass, seashore paspalum, St. Augustinegrass, tall fescue, zoysiagrass	3	1.15 lbs. 1.5 pts. 100-300 lbs. 135-406 lbs.	0.75 0.75 0.5-1.5 0.5-1.5	See Label	Controls annual grasses and broadleaf weeds. DO NOT apply to newly seeded, sprigged or sodded turfgrasses. On fall-seeded turfgrasses, delay the application for 60 days after seeding or until after the second mowing, whichever is longer time period. Split applications, each at one-half the maximum annual labeled rate, at a 60 day interval, may also be used. DO NOT apply to golf course putting greens or tees. RegalKade and RegalKade 37 are formulated on a 32-3-12 dry fertilizer carrier. Barricade 65WDG at 0.58 lbs. product/acre may be applied 8-10 weeks before overseeding perennial ryegrass into bermudagrass fairways. Reseeding restrictions can range from 4-12 months, depending upon the product and rate used, reseeding method and environmental conditions. Refer to the individual product label for additional information.
pronamide (Kerb T/O) 50WSP	bermudagrass, centipedegrass, St. Augustinegrass, zoysiagrass	3	1.0-2.0 lbs.	0.5-1.0	24	Preemergence or postemergence applications of Kerb will control annual bluegrass. May also be used in spring to slowly remove (4 to 6 weeks) overseeded perennial ryegrass from warm-season turfgrasses. For this purpose, apply Kerb at the 50% spring green-up warm-season turfgrass growth stage. A light overhead irrigation is necessary to move Kerb into the weed root zone if no rainfall occurs within 24-48 hours. DO NOT apply Kerb to any cool-season turfgrass. DO NOT apply to areas that will be overseeded with cool-season turfgrasses within 90 days of treatment. Kerb is a Restricted Use Herbicide.

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Preemergence Herbicides - continued						
simazine (Princep) 90DF (Princep Liquid) 4L Wynstar 90DF	bermudagrass, centipedegrass, St. Augustinegrass, zoysiagrass	5	1.1-2.2 lbs. 1.0-2.0 qts. 1.1-2.0 lbs.	1.0-2.0 1.0-2.0 1.0-1.8	12	Apply simazine in October or November for preemergence control of winter annual weeds. Apply December through February for late postemergence control of winter annuals. Apply low rate for annual bluegrass control; or high rate for winter annual broadleaf control. DO NOT overseed with desirable turfgrass within 4 months before or 6 months after treatment. DO NOT apply more than 1.0 lb. ai/A on newly sprigged turfgrass or on hybrid bermudagrass such as Tiflawn, Tifway and Ormond.
sulfentrazone + prodiamine (Echelon) 4SC	bermudagrass, buffalograss, carpetgrass, centipedegrass, Ky. bluegrass, seashore paspalum, tall fescue, zoysiagrass	14 + 3	18.0-36.0 fl. oz.	0.56-1.125	12	Controls annual grasses, certain annual broadleaf weeds, annual sedges, <i>kyllinga sp.</i> and yellow nutsedge. Use in established turfgrasses. May be applied after the second mowing of seeded grasses provided the grass has developed a uniform stand and a good root system. The high rate of 36.0 fl. oz./acre is recommended only for use on bermudagrass. This product can provide postemergence control of some, small annual broadleaf weeds. Do not apply to newly installed sod until the sod has rooted and exposed edges have grown in. Do not add an adjuvant or surfactant to the spray solution. In sod fields do not apply Echelon within 3 months of harvest. Echelon is not labeled for use on golf course putting greens.
Postemergence Herbicides						
2,4-D (Weedar 64) 3.8 lbs./gal. (Other trade names)	bermudagrass, centipedegrass, Ky. bluegrass, tall fescue, zoysiagrass	4	See Label	0.5-2.0	See Label	Amine formulations of 2,4-D are non-volatile and are safer than ester formulations to use near ornamentals. Apply to small and actively growing broadleaf weeds as a summer or winter treatment. To control wild garlic/onion, use 2.0 lbs. ai/A plus surfactant. Make first application in late November or early December and follow with a second application in February or March. Repeat this schedule for 3 consecutive years to control this weed. DO NOT apply 2,4-D to St. Augustinegrass. DO NOT apply more than 0.5 lb. ai/A of 2,4-D to centipedegrass. DO NOT allow spray drift to contact the foliage of ornamentals.
2,4-D + MCPP + dicamba (Three-way) (Trex-San) (Triplet) (Other trade names)	bermudagrass, Ky. bluegrass, tall fescue, zoysiagrass	4 + 4 + 4	See Label	0.75 + 0.4 + 0.08	See Label	Several commercial formulations are available. Refer to individual labels for the recommended amount of formulated product. Controls a broader spectrum of broadleaf weeds than 2,4-D alone. DO NOT spray when turfgrass is emerging from winter dormancy. Low rates of Triplet products may be used on St. Augustinegrass or centipedegrass. Avoid applications if air temperatures exceed 85°F. Delay reseeding for 4 weeks after treatment.
2,4-D + MCPP + 2,4-DP (Triamine) (Dissolve)	bermudagrass, centipedegrass, Ky. bluegrass, St. Augustinegrass, tall fescue, zoysiagrass	4 + 4 + 4	See Label	See Label	See Label	Refer to individual labels for recommended amount of formulated product. Controls a broader spectrum of weeds than 2,4-D alone. DO NOT spray at air temperatures greater than 85°F and when warm-season turfgrasses are growing under stress conditions. Delay reseeding for 4 weeks after treatment. Avoid applications when warm-season turfgrasses are emerging from winter dormancy.
2,4-D + clopyralid + dicamba (Millennium Ultra)	bermudagrass, Ky. bluegrass, tall fescue, zoysiagrass	4 + 4 + 4	2.0-3.0 pts.	--	48	Controls a broader spectrum of weeds than 2,4-D alone. DO NOT mow 1-2 days before or after application. Delay application to newly seeded grasses until after 3-4 mowings. Delay reseeding for 3-4 weeks after application. DO NOT spray when air temperatures are > 90°F. Not recommended for use on centipedegrass and St. Augustinegrass. Avoid applications during the spring transition of warm-season turfgrasses. Not labeled for use on residential turfgrasses.

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