

## LAWN AND TURF WEED MANAGEMENT

**TABLE I. Turfgrass tolerance to selected herbicides.\***

	bermudagrass	centipedegrass	St. Augustinegrass	zoysiagrass
<b>PREEMERGENCE HERBICIDES</b>				
atrazine	D	T	T	T
benefin	T	T	T	T
benefin + oryzalin	T	T	T	T
bensulide	T	T	T	T
bensulide + oxadiazon	T	NR	NR	T
dithiopyr	T	T	T	T
indaziflam	T	T	T	T
isoxaben	T	T	T	T
metolachlor	T	T	T	T
oryzalin	T	T	T	T
oxadiazon	T	NR	T	T
pendimethalin	T	T	T	T
proflam	T	T	T	T
simazine	I	T	T	T
sulfentrazone + proflam	T	T	NR	T

**\*Abbreviations:**

**T** = Tolerant at labeled rates

**I** = Intermediate safety

**NR** = Not recommended/labeled – severe injury potential

**D** = Dormant

	bermudagrass	centipedegrass	St. Augustinegrass	Zoysiagrass
<b>POSTEMERGENCE HERBICIDES</b>				
2,4-D	T	I	I	T
2,4-D + mecoprop + dicamba	T	I	I	T
atrazine	D	T	T	T
bentazon	T	T	T	T
carfentrazone	T	T	T	T
chlorsulfuron	T	T-I	T-I	T
clopyralid	T	T	T	T
dicamba	T	I	I	T
diclofop	T	NR	NR	NR
fenoxaprop	NR	NR	NR	T
fluazifop	NR	NR	NR	I
foramsulfuron	T	NR	NR	T
imazaquin	T	T	T	T
iodosulfuron + thien carbazon + dicamba	T	T	T	T
metribuzin	T-I	NR	NR	NR
metsulfuron	T	T	T	T
MSMA	T	NR	NR	T-I
pronamide	T	NR	NR	NR
rimsulfuron	T	T	NR	T
sethoxydim	NR	T	NR	NR
sulfentrazone	T	T	T-I	T
sulfosulfuron	T	T	T	T
triclopyr + clopyralid	I	I	NR	I
trifoxysulfuron	T	NR	NR	T
thien carbazon + foramsulfuron + halosulfuron	T	NR	NR	T

## LAWN AND TURF WEED MANAGEMENT

### GENERAL HOME LAWN WEED CONTROL

Home lawn broadleaf weed control can often be accomplished using selective postemergence formulations that contain two or more herbicides. Formulations are available for most Southern grasses. Examples are Bayer Advanced Southern Weed Killer, Trimec Southern, Ferti-lome Weed Free Zone, Ortho Weed-B-Gon, Atrazine, MSM Turf (metsulfuron). Most labels will stress their use on younger weeds growing in the cooler mid-spring to early summer period. A temporary discoloration of the lawn usually occurs. Repeat application in 3-4 weeks if needed on persistent weeds. **WARNING:** Some of these products contain phenoxy herbicides; avoid drift, keep away from gardens and clean sprayers thoroughly with ammonia. Atrazine-containing products enter through roots and leaves and work more slowly. **Note that MSMA is no longer labeled for home lawn use; however, existing quantities of MSMA purchased prior to 2010 may have a product label that allows for use on home lawns.**

Many manufacturers offer herbicides impregnated on fertilizer for homeowner use. However, these products have to be applied according to their intended use. Products containing a preemergence herbicide must be applied before the weed emerges. For crabgrass, application is typically early March in northern areas of Louisiana and mid- to late February in the southern portion of the state. A good rule of thumb is that *Forsythia plants begin to bloom just prior to crabgrass emergence*. If sufficient rainfall is not received, irrigation should be applied to activate the herbicide. Be sure to read and follow the manufacturer's label for maximum weed control and application instructions. Use a good quality spreader and make every effort to apply the product uniformly to the lawn. A good practice to ensure uniform application is to apply one-half of the desired amount in one direction across the lawn and the second half of the desired amount perpendicular to the first application.

**Virginia buttonweed infesting St. Augustinegrass, centipedegrass, bermudagrass and zoysiagrass lawns:** A herbicide program approach is necessary for managing Virginia buttonweed. Apply "trimec" type products, such as Weed B Gon or Weed Free Zone, on newly emerged buttonweed starting in mid- to late April when temperatures are less than 85 degrees. Repeat application within two weeks if possible. Once temperatures exceed 85 degrees, apply metsulfuron or Celsius every four to six weeks in lawns with very high buttonweed populations.

The best defense against weeds in a home lawn is to have a dense, healthy turf canopy. Be certain to remove no more than one third of the height of the turf in a single mowing. Maintain St. Augustinegrass at 3 inches. St. Augustinegrass will not tolerate short mowing. Centipedegrass, common bermudagrass and zoysiagrass should be maintained at 1.5 inches tall. Follow a recommended fertility regimen for your specific turf species and location.

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LAWNS and OTHER TURF AREAS			
Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
<b>PREEMERGENCE:</b>			
atrazine @ 1.0 lbs./A	Aatrex and Various other formulations (See labels) @ 1.0 qt/A or 0.75 fl oz/1,000 sq. ft.	<i>Poa</i> , winter annuals such as henbit, chickweed and lawn burweed.	<b>Restricted use.</b> Use only 1 qt./A per application. Safely applied to St. Augustine, centipede, zoysia and dormant bermudagrass late fall or early winter. For improved weed control, apply another 1 qt./A at least 30 days after the previous application but not after April 15. Do not make more than 2 applications of this product per year. Do not use in overseed areas. <b>Do not apply near drip line of trees and shrubs.</b>
Benefin @ 2.0-3.0 lbs./A	Balan 2.5 G @ 120 lbs./A or 2.75 lbs./1,000 sq. ft.	Crabgrass, goosegrass, <i>Poa annua</i> (annual bluegrass) and certain other annuals	Apply in late Feb. to early March in south La. and early to mid-March in north La. for many summer annual grasses and broadleaf weeds. Retreat in mid-Sept. in north La. and early to mid-Oct. in south La. for winter annuals. Do not seed treated areas within 4 months of last application. Use on established turf only.
bensulide @ 7.5-12.5 lbs./A	Bensumec 4 EC @ 1.9-3.1 gal./A or 5.6-11.2 oz./1,000 sq. ft.  Pre-San 7 G @ 107-180 lbs./A or 2.46-4.1 lbs./1,000 sq. ft.	Crabgrass, goosegrass, <i>Poa annua</i> and small seeded broadleaves	Apply in Feb. to early March in south La. and early March in north La. Apply in mid-Sept. in north La. and early Oct. in south La. for <i>Poa</i> . Do not seed treated areas within 4 months of last application. Use on established turf only. <b>Labeled for established bermudagrass greens.</b>
dimethenamid @ 1.0-1.5 lbs./A	Tower 6 EC @ 21-32 oz./A or 0.48-0.73 oz./1,000 sq. ft.	Preemergence on most annual grasses, certain broadleaf weeds, doveweed, yellow nutsedge	Most established Southern grasses grown in La. Good preemergence control of yellow nutsedge. Apply in Feb. to early March in south La. & early March in north La. Apply in mid-Sept. in north La. & early Oct. in south La. for <i>Poa</i> .
dimethenamid + pendimethalin @ 1.75-3.5 lbs./A	FreeHand @ 100-200 lbs./A or 2.3-4.6 lbs./1,000 sq. ft.	Preemergence on most annual grasses, certain broadleaf weeds, doveweed, yellow nutsedge	Most established Southern grasses grown in La. Good preemergence control of yellow nutsedge. Apply in Feb. to early March in south La. and early March in north La. Apply in mid-Sept. in north La. & early Oct. in south La. for <i>Poa</i> .
dithiopyr @ 0.5 lb./A	Dimension 1 EC @ 1 qt./A or 0.75 oz./1,000 sq. ft.  Dimension Ultra 40 WP @ 1.25 lb./A or 0.46 oz./1,000 sq. ft.	Crabgrass, <i>Poa</i> , foxtail, crowfoot, barnyardgrass, goosegrass, small-seeded annual broadleaves	May tank-mix with compatibles. Delay overseeding or sprigging for 3 mos. after application. Provides PRE control of several annual grasses and limited POST control of crabgrass. Apply on established turf only. May be used on all southern turf species.
indaziflam 0.015-0.04 lb./A	Specticle 20 WSP @ 1.2-3.5 oz./A or 0.028-0.080 oz./1,000 sq. ft.  Specticle Flo @ 6-10 oz./A or 0.14-0.23/1,000 sq. ft.	Crabgrass, <i>Poa</i> , foxtail, crowfoot, barnyardgrass, goosegrass, several annual broadleaves	Apply prior to weed emergence. Consider split applications approximately 60 days after the initial. Apply on established turf only. May be used on most Southern turf species. Do not use on greens.

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<b>PREEMERGENCE continued:</b>			
isoxaben @ 0.5-1.0 lb./A	Gallery 75 DF @ 0.7-1.3 lbs./A or 0.25-0.5 oz./1,000 sq. ft.	Many broadleaves. No grasses are controlled.	Do not apply through irrigation. Keep in agitation. Can tank-mix with other products. All established turfgrasses are tolerant.
metolachlor @ 1.2-2.6 lbs./A	Pennant Magnum 7.62 EC @ 1.3-2.6 pt./A or 0.48-0.96 oz./1,000 sq. ft.	<i>Poa</i> , goosegrass, crabgrass, yellow nutsedge, some annual sedges, small-seeded broadleaves	For warm-season turfgrasses. Not for tees or greens. Do not overseed 4 months prior or 6 months after. Also used for ornamental beds.
oryzalin @ 3.0 lbs./A	Surflan 4 AS @ 3 qt./A or 2.2 oz./1,000 sq. ft.	Crabgrass, ryegrass, goosegrass, foxtails barnyard grasses, and <i>Poa annua</i> as well as many broadleaves	Not for greens or tees. Delay reseeding 3-4 mos. Safe for all established warm-season grasses.
oxadiazon @ 2.0-4.0 lbs./A	Ronstar 2 G @ 100-200 lbs./A or 2.3-4.6 lbs./1,000 sq. ft.  Regal Ronstar 2 G @ 100-200 lbs./A or 2.3-4.6 lbs./1,000 sq. ft.  Ronstar 50 WP@ 4-6 lbs./A or 1.5-2.2 oz./1,000 sq. ft.	<i>Poa annua</i> , crabgrass, goosegrass, oxalis, many other annual grasses and broadleaf weeds	For use on established St. Augustine, zoysia and bermudagrass only. Do not exceed 150 lbs./A (3 lb. active) on St. Augustine turf. May cause temporary discoloration. <b>Do not apply to centipedegrass or bermudagrass golf greens.</b> Can split applications 30 days apart. 50WVP for dormant turf. Apply 50 WVP several weeks prior to greenup. Commercial turf only. <b>Best preemergence option for goosegrass.</b>
oxadiazon + bensulide @ 6 + 1.5 lbs./A	Goosegrass/Crabgrass Control @ 6.56 G @ 116 lbs./A or 2.6 lbs./1,000 sq. ft.	Crabgrass, goosegrass, <i>Poa annua</i>	Apply on established zoysia, perennial ryegrass and bermudagrass. <b>May be applied to established greens and tee boxes.</b>
pendimethalin @ 1.7-3.0 lbs./A	Pendulum 3.3 EC @ 3.6-4.8 pt./A or 1.3-1.8 oz./1,000 sq. ft.  Pendulum AquaCap 3.8 @ 3.1-6.2 pt./A or 1.15 oz.-2.3 oz./1,000 sq. ft.  Pendulum 2G @ 75-150 lbs./A or 1.7-3.4 lbs./1,000 sq. ft.	Goosegrass, crabgrass, small-seeded broadleaves	For established warm-season grasses. Not for spring use when turf suffers from severe winter kills. Irrigate after application. All Southern grasses are tolerant.
prodiamine @ 0.75-1 lb./A	Barricade 65 WG @ 0.75-1.5 lbs./A or 0.28 - 0.4 oz./1,000 sq. ft.  Barricade 4L @ 0.625-3 pt/A or 0.23-1.1 oz./1,000 sq. ft.	Crabgrass, <i>Poa annua</i> , foxtail, crowfootgrass, barnyardgrass, goosegrass, small-seeded annual broadleaves	On established turf, including ryegrass. Long residual. Use caution if winter kill of existing turf is suspected. Most grasses are tolerant. Split applications for goosegrass.
prodiamine + imazaquin + simazine @ 1.875-2.5 lbs./A	Coastal @ 48-64 oz/A or 1.1-1.46 oz./1,000 sq. ft.	Crabgrass, goosegrass, foxtail, <i>Poa</i> and several summer and	Application window is September 15 to May 31. 64 oz/A is recommended for fall weed control. Provides

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Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
		winter broadleaves including burweed and clovers	excellent control of crabgrass, Controls <i>Poa</i> as well as many broadleaves. Labeled for bermudagrass (not for golf greens) including non-overseeded athletic fields, centipedegrass, St. Augustinegrass, and zoysiagrass.
prodiamine + sulfentrazone @ 0.25-1.125 lbs./A	Echelon 4 SC @ 0.5-2.25 pt./A or 0.184-0.826 oz/1,000 sq. ft.	Annual grasses, annual sedges, yellow nutsedge, certain broadleaf weeds	Apply safely to bermudagrass, centipedegrass, zoysia and seashore paspalum after the second mowing. <b>Do not apply on St. Augustinegrass.</b>
pronamide @ 0.5-1.5 lbs/A (total)	Kerb 3.3SC @ 1.5-2.5 pt/A (3.5 pt/A is the cumulative max amount allowed per year) or 0.55-0.92 oz/1,000 sq ft	Pre- or early post- in fall or winter for control of <i>Poa annua</i>	<b>May be applied to established greens and tee boxes.</b> Use on dormant or active bermudagrass for <i>Poa</i> . Acts mainly through root absorption. Beware of runoff onto sensitive grasses. Do not use within 70 days prior to overseeding. Postemergence activity is slow (1-2 months). For emerged <i>Poa</i> , apply 2 to 2.5 pt/A. Do not apply more than 2.5 pt/A per application. Do not exceed 3.5 pt/A total. Careful with spray overlaps! Ryegrass and overseed winter grasses will be injured or killed. <b>Restricted use.</b>
<b>PREEMERGENCE continued:</b>			
simazine @ 1-2 lbs./A	Simazine 4 L @ 1-2 qt./A or 0.75-1.5 oz./1,000 sq. ft.	Provides good control of <i>Poa annua</i> as well as many winter broadleaves	Safely applied to St. Augustine, centipede, zoysia and bermudagrass late fall or early winter. Do not use in overseeded areas. May be applied Sept. 1 to June 1. Some triazine resistant <i>Poa</i> populations becoming more present in the state.
sulfentrazone + prodiamine @ 0.25-1.125 lbs/A	Echelon 4 SC @ 0.5-2.25 pt./A or 0.184-0.826 oz/1,000 sq. ft.	Annual grasses, annual sedges, yellow nutsedge, certain broadleaf weeds	Apply safely to bermudagrass, centipedegrass, zoysia and seashore paspalum after the second mowing. <b>Do not apply on St. Augustinegrass.</b>
<b>SELECTIVE POSTEMERGENCE:</b>			
atrazine @ 1.0 lbs./A	Aatrex and Various other formulations (See labels) @ 1.0 qt./A or 0.75 fl oz./1,000 sq. ft.	Florida betony, <i>Poa</i> , dollarweed, lespedeza, henbit, lawn burweed	<b>Restricted use.</b> Safely applied to St. Augustine, centipedegrass, zoysiagrass and dormant bermudagrass in early winter for several winter weeds. For improved weed control, apply another 1 qt./A at least 30 days after the previous application but not after April 15. Do not make more than 2 applications of this product per year Do not use in overseed areas. <b>Do not apply near drip line of trees and shrubs.</b>
simazine @ 1 lbs-2 lbs./A	Simazine 4 L @ 1-2 qt./A or 0.75-1.5 oz./1,000 sq. ft.	Good post control of <i>Poa annua</i> and many winter broadleaves	Safely applied to St. Augustine, centipedegrass, zoysiagrass and bermudagrass fall or early winter. Do not use in overseeded areas. For improved weed control, apply another 1 qt./A at least 30 days after the previous application but not after June 1st. Do not make more than 2 applications of this product per

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Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
			year. Apply after last home game on non-over-seeded football fields.
<b>SELECTIVE POSTEMERGENCE</b>			
<b>continued:</b>			
asulam @ 1.7- 2.1 lbs./A	Asulox 3.3 EC @ 4-5 pt./A 1.5-1.8 oz./1,000 sq. ft.	Crabgrass, goosegrass, sandbur	Postemergence: use in Tifway 419 bermudagrass and St. Augustinegrass sod. <b>Do not apply to residential turf.</b> Do not apply to freshly mowed or stressed turf. Do not use surfactant. One application per season. Some discoloration may occur, especially in hot weather. Injurious to centipede grass.
bentazon @ 1.0-2.0 lbs./A	Basagran T/O or Lescogran 4 SL 1-2 qt./A or 0.75-1.5 oz./1,000 sq. ft.	Yellow nutsedge and annual sedges; green kyllinga with repeat applications	Use on established warm-season grasses turf. Can repeat at 10-14 days. Do not apply more than 3 qt./A/season. Do not mow 3-5 days before or after application. May add crop oil concentrate.
clopyralid @ 0.09-0.5 lb./A	Lontrel 3 EC @ 0.25-1.33 pt./A 0.1-0.5 oz./1,000 sq. ft.	Broadleaf weeds, including legumes and buttonweed	Safely applied to all warm-season grasses. Do not use on putting greens or tees. No surfactant is needed. Can provide effective control of Virginia buttonweed but repeated applications may be necessary. Avoid drift to susceptible ornamental plants. <b>Do not apply to residential turf.</b>
dicamba @ 0.25-0.5 lb./A	Banvel 4S @ 0.5-1 pt./A or 1-2 tsp./1,000 sq. ft.	Annual and biennial broadleaves, woody brush and vines. Chickweed, white clover, henbit, burweed, wild strawberry, curly dock, spotted spurge	Use on deep-rooted, stubborn broadleaves. Apply sufficient gallons to coat foliage down to base of plant. Repeat application may be needed. Do not exceed 0.5 lb. per acre per year. Applications over 0.25 lb./A may temporarily stunt and discolor some grasses. Apply no more than 0.5 pt./A to St. Augustinegrass. May be tank-mixed with 2,4-D, MCPP, MCPA (consult label).
dicamba diglycolamine @ 0.09-1lb./A	Clarity @ 3 – 32 oz./A or 0.07-0.74 oz./1,000 sq. ft.	Same weeds controlled with Banvel	After green-up. To avoid injury to newly emerged grasses, wait until after the second mowing to apply. Applications of more than 16 oz./A may discolor susceptible grasses. Consult label. Do not exceed 32 oz./A/yr. See recommendations for sensitive grasses.
ethofumesate @ 1.0-2.0 lbs./A	Prograss 1.5 F @ 1.0-2.0 gal./A or 3-6 oz./1,000 sq. ft. on lt soil 3.5-4 oz./1,000 sq. ft. on med-hvy soil	Annual grasses ( <i>Poa annua</i> ), pigweed, chickweed, purslane, barnyardgrass, crabgrass, foxtail; suppresses nutsedge	Apply pre- or early post-emerge. Hastens or extends dormancy in bermudagrass. Therefore, apply 3-4 wks after overseeding. Do not overlap. Repeat once for extended control. Overseed only with perennial ryegrass. Maximum 8 pt./A/season. Seasonal influences on bermudagrass recovery can be significant for Baton Rouge and southward.

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<b>LAWNS and OTHER TURF AREAS</b>			
<b>Active Ingredient and Rate</b>	<b>Formulated Product and Rate</b>	<b>Weeds Controlled</b>	<b>Remarks and Precautions</b>
fenoxaprop @ 0.57-0.174 lb./A	Acclaim 0.57 EC @ 13-39 fl. oz./A or 0.75-1 fl. oz./1,000 sq. ft	Early postemergence: several annual grasses and bermudagrass suppression.	Can be safely applied to zoysiagrass. Suppresses bermudagrass infesting zoysia.
fenoxaprop @ 0.57-0.174 lb./A	Acclaim 0.57 EC @ 13-39 fl. oz./A or 0.75-1 fl. oz./1,000 sq. ft	Early postemergence: several annual grasses and bermudagrass suppression.	Can be safely applied to zoysiagrass. Suppresses bermudagrass infesting zoysia.
flazasulfuron @ 0.012-0.047 lb./A	Katana 25 DF @ 0.75-3.0 oz./A or 0.0172-0.068 oz./1,000 ft <sup>2</sup>	Effective removal of perennial ryegrass and <i>Poa trivialis</i> overseed; also controls annual bluegrass, blue-eyed grass and newly emerged crabgrass.	Bermudagrass or zoysia with some limited lower rate use in centipedegrass. <b>Do not apply on golf greens.</b>
halosulfuron @ 0.03-0.06 lb./A	Sedgehammer 75 WDG @ 0.6-1.33 oz./A or 0.138-0.03 oz./1,000 sq. ft. or 0.25 tsp./gal. spot	Nutsedges (purple & yellow); suppression of kyllinga species	Postemergence with repeat application necessary within 6 weeks with heavy infestations. Use non-ionic surfactant. Can be used on all warm-season grasses.
<b>SELECTIVE POSTEMERGENCE continued:</b>			
imazaquin @ 0.38-0.5 lb./A	Scepter, Image 70 DG @ 8.6-11.4 oz. or 0.2-0.26 oz./1,000 sq. ft.	Chickweed, henbit, geranium, pigweed, onions, purple nutsedge, burweed, sandbur; suppression of kyllinga and dollarweed	Can be used on all warm-season grasses. However, do not apply to dormant or transitional St. Augustinegrass. Not for cool-season grasses or golf greens. Some yellowing may occur especially in tire tracks or low areas. Repeat for improved control.
iodosulfuron + thiencazabone + dicamba @ 0.10-0.21 lb./A	Celsius 68 WG @ 2.5-4.9 oz./A or 0.057-0.113 oz./1,000 sq. ft.	Broadleaf weeds such as white clover, chickweed, buttonweed; suppression of dallisgrass with sequential applications or applied as spot. Repeated applications will kill carpetgrass.	Do not exceed 7.4 oz/A/year. Good safety on most lawn grasses grown in La. except carpetgrass. Good safety on St. Augustinegrass in hot weather. <b>Do not apply to a turf overseeded with cool-season grasses such as perennial ryegrass. Allow a minimum of 14 days before overseeding with ryegrass. Do not apply to carpetgrass or bahiagrass.</b>
iodosulfuron + thiencazabone + halosulfuron @ 0.048-0.095 lb./A	Celsius XTRA 15.2 WDG @ 5-10 oz/A or 0.12-0.23 oz/1,000 sq. ft.	Improved sedge control over Celsius. Broadleaf weeds such as white clover, chickweed, buttonweed;	Do not apply more than a total of 15 oz/year. Celsius XTRA provides better sedge control over Celsius. Sequential applications of 7.5 oz/A followed by 7.5 oz/A are very effective when applied 6 weeks apart. <b>Do not apply to a turf overseeded with cool-season grasses such as perennial ryegrass. Allow a minimum of 14 days before overseeding with ryegrass. Do not apply to carpetgrass or bahiagrass.</b>
<b>SELECTIVE POSTEMERGENCE continued:</b>			

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<b>LAWNS and OTHER TURF AREAS</b>			
<b>Active Ingredient and Rate</b>	<b>Formulated Product and Rate</b>	<b>Weeds Controlled</b>	<b>Remarks and Precautions</b>
metsulfuron @ 0.01-0.038 lb./A	MSM and various trade names. 60 WDG @ 0.33-1 oz./A or 0.007-0.023 oz./1,000 sq. ft.	Pensacola bahiagrass, clovers, rose (pink) woodsorrel, spurge, lawn burweed and many other winter weeds. Virginia buttonweed suppression with 2 applications sprayed 6 weeks apart	Controls a wide range of broadleaf weeds. Labeled for St. Augustinegrass, bermudagrass, zoysiagrass, centipedegrass. Do not exceed 0.5 oz./A on centipedegrass. Do not overseed for 8 weeks after application. Be precise with applications. This is a low use rate herbicide. Improper rates can injure or kill shrubs and trees.
metsulfuron + dicamba @ 0.187-0.285 lbs./A	Fahrenheit 38 WSG @ 3-12 oz/A or 0.07-0.275 oz./1,000 sq. ft.	Pensacola bahiagrass, clovers, rose (pink) woodsorrel, stinging nettle, many winter broadleaves; Suppression of Virginia buttonweed.	Apply from 3-12 oz./A in St. Augustinegrass, bermudagrass, and zoysiagrass. Use from 3-6 oz/A in centipedegrass. Apply at least 6 oz./A for buttonweed. Do not overseed for 60 days after application.
metsulfuron + Sulfentrazone @ 0.269-0.413 lbs./A	Blindside 6.5-10 oz/A or 0.15-0.23 oz./1,000 sq ft	Pensacola bahiagrass, clovers, pink and yellow woodsorrel, stinging nettle, many winter broadleaves; Suppression of doveweed. Good control of annual and perennial sedges, including kyllinga species.	Two applications of Blindside 21 days apart may increase control of weeds over a single application; however, do not exceed 10 oz. product per acre per year. Some suppression of doveweed, especially with a follow up application.
metribuzin @ 0.2-0.5 lb./A	Sencor 75 DF @ 5.3-10.5 oz./A or 0.12-0.24 oz./1,000 sq. ft.	Chickweed, henbit, burweed, Speedwell, suppresses goosegrass. Controls goosegrass when tank mixed with MSMA	Postemergence on dormant bermudagrass turf (use higher rates). Actively growing turf (mid-spring) bermudagrass only. Do not apply on golf greens, tees, or aprons. Delay mowing for at least 3 days before spray. Do not exceed 1.5 lbs./A/season or more than 1 application on dormant or 2 applications on active turf. Mix with MSMA at 0.1-0.2 lb./A for goosegrass control.
MSMA @ 2.0-3.0 lbs./A	MSMA 6 SL @ 1.3-2 qt./A or 1.0 – 1.5 oz./1,000 sq. ft.  MSMA 6.6 SL @ 1.2-1.8 qt./A or 1.0-1.3 oz./1,000 sq. ft	Bahiagrass, crabgrass, dallisgrass, nutsedges	Bermudagrass and zoysia are tolerant. A 6 lbs./gal. formulation has surfactant, but 6.6 lbs./gal. formulation does not. Best performance can be expected when air temperatures are at least 80 degrees. Repeat applications are required 7-10 days apart. Dallisgrass control requires multiple applications. <b>Emerald zoysia is susceptible to MSMA. No longer labeled for lawns or sports fields. See application restrictions on product label.</b>
Penoxulam + sulfentrazone + 2,4-D + dicamba @ 0.48-0.50 lb./A	Avenue South 0.80 EC @ 3.1-5.0 pt./A or 1.10 to 1.80 oz./1,000 ft <sup>2</sup>	Dollarweed, clover, buttonweed, spurge	Good safety on St. Augustinegrass and safe for all Deep South turf species. Consult label for specific turf rates. Good control of many cool season and summer broadleaf weeds.
2,4-D + MCPP + dicamba @ 0.68-1.35 lbs./A	Trimec Classic 2.7 EC @ 2-4 pt./A (consult label for other turf) or	Virginia buttonweed, Henbit, lespedeza, clovers, dandelion,	Consult label for specific turf rates. Provides good control of many broadleaf weeds. Avoid nontarget



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<b>LAWNS and OTHER TURF AREAS</b>			
<b>Active Ingredient and Rate</b>	<b>Formulated Product and Rate</b>	<b>Weeds Controlled</b>	<b>Remarks and Precautions</b>
	0.75-1.5 oz./1,000 sq. ft. for hybrid Bermuda and 1 oz./1,000 sq. ft. for St. Augustinegrass or centipedegrass	dock, burweed, bull thistle, wild strawberry and many other broadleaves	drift. For clover, 4 pt./A is recommended. Maximum of 2 applications per year. Do not apply when temperatures exceed 85 F.
2,4-D + MCPP + dicamba @ 0.375-0.75 lb./A	Trimec Southern 3 EC @ 1-2 pt./A or 0.37-1 oz./1,000 sq. ft. (consult label for specific turf)	Henbit, lespedeza, clovers, dandelion, dock, lawn burweed, bull thistle, wild strawberry and many other broadleaves	May be applied to most Southern turf. However, use rates vary for particular grass species. Use 1.5 pt./A in St. Augustinegrass. Contains less 2,4-D than Trimec Classic. Do not apply when temperatures exceed 90 degrees.
2,4-D + MCPP + dicamba + carfentrazone @ 0.1519-0.6075 lb./A	Speed Zone South 2.2 EC @ 1.5-6 pt./A or 0.55-2.2 oz./1,000 sq. ft. for hybrid Bermuda 1 oz./1,000 sq. ft. for St. Augustinegrass or centipedegrass	Virginia buttonweed, Henbit, lespedeza, clovers, dandelion, dock, lawn burweed, bull thistle, wild strawberry and many other broadleaves	May be used in most warm-season turfgrass. Consult label for specific turf rates. Provides good control of many broadleaf weeds. Avoid nontarget drift. Do not apply when temperatures exceed 85 degrees.
<b>SELECTIVE POSTEMERGENCE</b>			
<b>continued:</b>			
2,4-D amine @ 0.75-1 lb./A	2,4-D amine 3.84 EC @ 1.5-2.0 pt./A or 1.0 oz. or 2 tbsp./2 gal. water/1,000 sq. ft.  Spot treatments @ 0.5 oz./gallon/1,000 sq. ft. in St.	Many annual, biennial and perennial broadleaf weeds.	St. Augustinegrass is the most sensitive warm-season turf. Use spot treatments instead of broadcast. Apply on sunny days when the temperature is well above 60 degrees and there is little wind presence. <b>Observe regional rules concerning 2,4-D use in cotton-producing areas of the state.</b>
quinclorac @ 0.75/A	Drive 75 DF 1 lb./A or 0.367 oz./1,000 sq. ft.  Drive XLR 8 @ 64 oz/A or 1.45 oz/1,000 ft <sup>2</sup>	Crabgrass, barnyardgrass, lespedeza, clover; suppression of torpedograss	For bermudagrass and zoysia. <b>Do not apply to centipedegrass, St. Augustinegrass or bahiagrass.</b> Three applications needed for torpedograss management.
quinclorac, sulfentrazone, dicamba, 2,4-D @ 1.1-1.6 lbs./A	Q4 Plus @ 5-7 pt./A or 1.8-2.6 oz./1,000 ft <sup>2</sup>	Crabgrass, barnyardgrass, broadleaf signalgrass, foxtail, lespedeza, clover, Florida betony, yellow nutsedge	Warm-season application is limited to bermudagrass. Reduced crabgrass control at 3 to 4 tillers. Apply at least 2 days before mowing or 2 days after. <b>Do not apply to centipedegrass or St. Augustinegrass.</b>
rimsulfuron @ 0.031-0.062 lb./A	Rimsulfuron 25 DF @ 1-2 oz./A or 0.046-0.09 oz./1,000 sq. ft.	<i>Poa annua</i> , perennial ryegrass overseed	<i>Poa annua</i> control in non-overseeded bermudagrass. Transitional aid for the removal of ryegrass overseed. <b>May be used on established bermudagrass golf greens and tees.</b>
sethoxydim @ 0.3-0.5 lb./A	Segment II 1.5 EC @ 1.5-2.5 pt./A or 0.60-0.90 fl oz./1,000 sq. ft.	Crabgrass, goosegrass; other annual grasses; suppression of bermudagrass; temporary suppression of torpedograss; poor control of carpetgrass.	Postemergence on grassy weeds in centipede. May be used on seedling centipedegrass (delay application until 3 in. of new stolon growth) and established centipedegrass. Apply at 0.4 oz/1,000 sq. ft or pt./A rate for seedling centipedegrass. Ensure good

## LAWN AND TURF WEED MANAGEMENT

<b>LAWNS and OTHER TURF AREAS</b>			
Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
			coverage of target foliage. Use during good growing conditions. If centipedegrass is cold-stressed, delay application until 3 weeks after green up. A maximum 2 applications/year on established centipede. Only suppresses torpedograss. For bahiagrass suppression, reapply 10 – 14 days after first application. Some limited torpedograss suppression with 2 applications spaced 3 weeks apart. COC or MSO improves control but may increase injury in hot and humid conditions.
sulfosulfuron @ 0.05-0.09 lb./A	Certainty 75 WG @ 1.25-2.0 oz./A or 0.03-0.04 oz./1,000 sq. ft.	Yellow and purple nutsedge, green kyllinga, johnsongrass	Safe on all warm-season turfgrasses and very effective on most sedges including green kyllinga. Also controls johnsongrass.
thiencarbazone + foramsulfuron+halosulfuron @ 0.037 – 0.121 lb./A	Tribute Total 60.5 WDG @ 1.0-3.2 oz./A or 0.02-0.07 oz./1,000 sq. ft.	Several grassy and broadleaf weeds including ryegrass, <i>Poa</i> , clovers, buttonweed; suppression of dallisgrass	<b>Bermudagrass and zoysiagrass only.</b> Use a non-ionic surfactant. Provides good suppression of dallisgrass when applied in 2 applications in late summer to early fall @ 3.2 oz./A per application. Can be helpful in the management of buttonweed.
triclopyr + clopyralid @ 0.09-0.19 lb./A.	Confront 3 SL @ 1.5-2.0 pt./A or 0.5-0.75 oz./1,000 sq. ft. or pump-up sprayer @ 1 tbsp./gal. for spot treatments	Many annual and perennial broadleaves; black medic, white clover, chickweed, burweed, lespedeza, wild violet, Virginia buttonweed	Postemergence on active weeds. Repeat if necessary. May be used on bermudagrass, centipedegrass and zoysia. Do not apply on St. Augustinegrass. Avoid drift and contact of shrubs. Not for golf greens or tees. A maximum 2 qt./A/yr. <b>Do not apply to residential turf.</b>
trifloxysulfuron @ 0.015-0.02 lb./A	Monument 75 WG @ 0.33-0.56 oz./A or 0.007-0.011 oz./1,000 sq. ft.  Spot treatment @ 0.0176 oz./gallon + 2 teaspoons of non-ionic surfactant.	Purple, yellow, annual sedges; green kyllinga, oxalis, white clover, spotted spurge, <i>Poa</i> , ryegrass overseed, Virginia buttonweed	Bermudagrass and zoysia only. Excellent sedge and green kyllinga control. Suppresses Virginia buttonweed. Repeat applications may be needed 4 wks after initial application for buttonweed. Use rates 0.1-0.3 oz./A for overseed removal. Allow 6 weeks between last application and overseeding with ryegrasses. Labeled for bermudagrass and zoysiagrass. <b>May be applied on bermudagrass golf greens.</b>
<b>SOIL FUMIGANT:</b>			
dazomet @346.5 lbs./A	Basamid 99 G @ 350 lbs./A or 8 lbs./1,000 sq. ft.	Soil treatment that kills most weeds prior to planting.	Follow label carefully. Apply prior to planting. Fall for early spring planting. Soil fumigant used 2-4 weeks ahead of planting depending on soil temperature. Toxic to fish.
<b>NON-SELECTIVE:</b>			
diquat 0.25-0.5 lb./A	Reward 2 SL @ 1-2 pt./A 0.4-4.4 fl oz./1,000 sq. ft.	Most annual weeds	Use on dormant bermudagrass and for edging. Top burn kill; same as paraquat. Presently a 24C label. Add

## LAWN AND TURF WEED MANAGEMENT

<b>LAWNS and OTHER TURF AREAS</b>			
<b>Active Ingredient and Rate</b>	<b>Formulated Product and Rate</b>	<b>Weeds Controlled</b>	<b>Remarks and Precautions</b>
	Various other formulations		a non-ionic surfactant, if advised. Not effective on perennial weeds.
glufosinate – ammonium @ 0.75-1.5 lbs./A	Finale I SL @ 3-6 qt./A or spot treatment 1.5-4.0 oz./gal.	Most weeds, including Asian jasmine	Nonselective burndown like paraquat. Locally systemic. Many tank-mix combinations. Use 20-40 g/A for sufficient coverage.
glyphosate @ 1.0-5.0 lb.	Roundup Pro 4 SL and others @ 1-1.5 qt./A for annuals or 2.5-5 qt./A for perennials and turf renovation  0.75-3 oz./1,000 sq. ft. or Spot treatments @ 1-2% solution	Most grasses and herbaceous broadleaves	This nonselective herbicide is systemic. Spray foliage to wet. Use when no rain is expected for at least 6 hours. Plants should not be stressed. Use when target vegetation is actively growing. For turf renovation, wait 7-10 days before cultivating. Not for use on dormant St. Augustinegrass, centipedegrass or carpetgrass.