PERENNIAL GRASS: PERENNIAL GRASS INSECT CONTROL

Including bermudagrasses, bahiagrasses, fescues, and other perennial pasture grasses

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PEST	MATERIAL AND FORMULATION[1]	MOA	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Bahiagrass borer, billbug larvae, white grubs, whitefringed beetle larvae				No effective insecticides labeled for control of these insects in pastures. If practical, rotate fields to crops where pre-plant or at-planting insecticides can be used to control these insects. **Exception:** Deep turning of infested pastures usually reduces bahiagrass borer populations to the point that bahiagrass or other grasses can be reseeded into the pasture.
Bermudagrass Stem Maggot	Various pyrethroids (*zeta-cypermethrin*, *cyfluthrin*, *lambda-cyhalothrin*, etc)	3A	Lowest label rate	Apply 7-10 days after cutting if significant damage was noted.
Chinch bug	Mow or burn			**WHEN TO TREAT FOR INSECTS IN PERENNIAL-GRASS PASTURES** FOLIAGE FEEDING CATERPILLARS (armyworm, fall armyworm, mocis grassworms, sod webworms, yellowstriped armyworm)**:** Treat when larval populations of these insects (any one or any combination) exceed 3 larvae (1/2" long or larger) per square foot. APHIDS: Treat if heavy infestations are causing leaf discoloration over large areas of the field. CHINCH BUGS: Treat if populations are causing grass leaves to wilt over large areas of the field. CUTWORMS, FLEA BEETLES, GRASSHOPPERS: Treat if heavy populations appear to be defoliating grass excessively. FIRE ANTS: Treat in pastures where heavy livestock birthing will occur. In hay pastures, treat when mounds are so numerous they interfere with haying operations. GREEN JUNE BEETLE LARVAE: Treat when populations average 1 larva/sq yd. LEAFHOPPERS: Treat if heavy infestations are causing the grass to appear off-color or unthrifty. SPITTLEBUGS: Treat when 1 or more adult spittlebug is found per square foot. THRIPS: Treat if heavy infestations are causing discolorations and damage over large areas of the field. **PESTICIDE USE PRECAUTIONS** Apply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where a range of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate on dense grass growth or large larvae. Amdro: 7 day PHI for hay. Okay for grazing. Baythroid: 0 day PHI for hay and grazing, see label for other restrictions. *carbaryl* (Sevin, etc.): Do not graze or cut for hay for 14 days after application. *cypermethrin* (Mustang Maxx): 0 day PHI for hay or forage; Do not apply more than 0.10 lb/A/season. *diflubenzuron* (Dimilin): 0 day for grazing; 1 day PHI for hay; no more than 2 oz/cutting.
	lambda-cyhalothrin Warrior II Zeon	3A	1.28-1.92 oz	
	zeta-cypermethrin Mustang Maxx	3A	2.24-4 oz	
Cutworms	Materials applied for armyworms will give helpful control.			
Armyworm, Caterpillars, Fall armyworm, Striped Grass Looper	*carbaryl* Sevin SL, Sevin 4F Others	1A	1-1.5 qt	
	chlorantraniliprole Prevathon	28	14-20 oz	
	chlorantraniliprole + *lambda-cyhalothrin* Besiege	3 + 28	6-10 fl oz	
	cyfluthrin Baythroid XL	3A	2.6-2.8 fl oz	
	diflubenzuron Dimilin 2L	15	1-2 oz	
	lambda-cyhalothrin Warrior II Zeon	3A	1.28-1.92 oz	
	methoxyfenozide Intrepid 2F	18	4-8 oz	
	spinosad Tracer, Blackhawk	5	1-2 oz	
	methomyl Lannate 2.4 LV, 90SP (Use methomyl on bermudagrass only.)	1A	1-2 pt 0.25-0.5 lb	
	zeta-cypermethrin Mustang Maxx	3A	2.24-4 oz	

PERENNIAL GRASS INSECT CONTROL

PEST	MATERIAL AND FORMULATION	MOA	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Fire ants	*hydramethylnon* Amdro	20A	1-1.5 lb	**PESTICIDE USE PRECAUTIONS** Apply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where a range of rates is given for a material, use the low rate on low-growth grass or small larvae, and the high rate on dense grass growth or large larvae. Intrepid: 0 day grazing interval, 7 day PHI for hay. One application per cutting. Warrior II Zeon: 0 day grazing restriction, 7 day PHI for hay, see label for application restrictions. *methomyl*: Do not cut for hay within 3 days, or graze or feed treated crop within 7 days of last application. Do not apply more than 0.9 lb ai/A/crop. Do not make more than 4 applications per crop. *spinosad* (Tracer): Do not harvest hay or fodder for 3 days. Do not graze until spray has dried. Do not apply more than 6 oz/season. Besiege and Prevathon (*chlorantraniliprole*): 0 day PHI for forage or grazing; 7 day PHI for hay.
	methoprene Extinguish	7A		
	spinosad Justice	5	mound treatment only	
Flea beetles	*Carbaryl* as applied for armyworm may give helpful control.			
	lambda-cyhalothrin Warrior II Zeon	3A	1.28-1.92 oz	
Grasshoppers	*malathion* 8EC		20 fl oz	
	cyfluthrin Baythroid XL	3A	2.6-2.8 fl oz	
	lambda-cyhalothrin Warrior II Zeon	3A	1.28-1.92 oz	
	carbaryl Sevin 4L	1A	1-1.5 qt	
	zeta-cypermethrin Mustang Maxx	3A	2.24-4 oz	
Green June beetle larvae	*carbaryl* Sevin 4L	1A	1-1.5 qt	
	lambda-cyhalothrin + *chlorantraniliprole* Besiege	28 + 3A	5-9 oz	
Leafhoppers	*lambda-cyhalothrin* Warrior II Zeon	3A	1.28-1.92 oz	
	zeta-cypermethrin Mustang Maxx	3A	2.24-4 oz	

PERENNIAL GRASS INSECT CONTROL

PEST	MATERIAL AND FORMULATION[1]	MOA	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Mole crickets	No economically effective materials currently labeled.			
Sod webworms	*carbaryl* Sevin SL Sevin 4F others	1A	 1.25 lb 2 lb	
	diflubenzuron Dimilin 2L	15	1-2 oz	
	lambda-cyhalothrin Warrior II Zeon	3A	1.28-1.92 oz	
Spittlebug adults	*carbaryl* (Sevin) as applied for armyworm may give helpful control. (Control of immatures may require cut and burn approach.)			
	lambda-cyhalothrin Warrior II Zeon	3A	1.28-1.92 oz	
	zeta-cypermethrin Mustang Maxx	3A	2.24-4 oz	

[1] Abbreviations used are: EC=emulsifiable concentrate, M=microencapsulated material, SP=soluble powder, L=liquid, S=sprayable powder, WP=wettable powder. Numbers following liquid formulations indicate lbs active ingredient per gallon; those following solids indicate percent active ingredient.

WEED CONTROL IN GRASS PASTURES AND HAYFIELDS

(Including bermudagrasses, bahiagrasses, fescues, and other perennial pasture grasses)

Patrick E. McCullough, Extension Agronomist – Weed Science

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
NEWLY SPRIGGED BERMUDAGRASS					
diuron Direx 4 L Diuron 4L Diuron 4L Diuron 80	7	 0.8-2.4 qt 0.8-2.4 qt 0.8-2.4 qt 1-3 lb	0.8-2.4 lb	12 H	Pre-emergence applications of *diuron* provide fair to good control of crabgrass, crowfootgrass, and goosegrass. Also provides residual control of certain annual broadleaf weeds. *Diuron* should be applied immediately after sprigging before weeds emerge. Bermuda sprigs should be planted 2" deep to lessen chance of injury. Emerged bermuda at the time of treatment may be temporarily injured. Do not graze or feed treated foliage for 70 days after *diuron* application. *Diuron* is not labeled in established forage bermudagrass.
2,4-D Esteron 99C 4 lb/gal *2,4-D* LV 4 Ester *2,4-D* LV 6 Ester	4	 1-2 qt 1-2 qt 1.3-3 pt	1-2	12 H	Apply to emerged broadleaf weeds 3-4" tall. Provides poor pre-emergence control of crabgrass. Refer to specific herbicide label for use information.
2,4-D + *dicamba* WeedMaster 2.87 + 1 lb/gal	4 + 4	 2-4 pt	0.72 + 0.25 to 1.44 + 0.5	48 H	Apply 7-10 days after sprigging for the post-emergence control of seedling broadleaf and grass weeds. Reduced control will occur if weeds are taller than 1", or if weed seed germination occurs 10 or more days after application. Do not graze lactating dairy animals within 7 days of application. There is no grazing restriction after an application for non-lactating animals. Do not graze meat animals in treated areas within 30 days of slaughter. Do not cut for hay within 37 days of treatment.
ESTABLISHED DORMANT BERMUDAGRASS					
paraquat Firestorm 3 lb gal Gramoxone Inteon 2 lb/gal	22	 0.7-1.3 pt 1-2 pt	0.25-0.5	12 H 24 H	Apply in 20-30 gallons of water in late winter or early spring (probably in February or March) before bermudagrass begins spring green-up. Add 1 pt non-ionic surfactant/100 gal spray mix. Do not pasture or mow for hay until 40 days after treatment.
glyphosate Roundup PowerMax Roundup Original Max Roundup Weather Max 5.5 lb/gal	9	 8-11 fl oz	0.34-0.47	4 H	Apply in mid-late winter months to bermudagrass pastures and hayfields for the control of little barley, cheat, and to suppress annual Italian ryegrass. Apply before new growth appears in the spring. Bermudagrass that is not dormant at the time of application may show a slight (2-4 week) delay in green-up. There is no grazing or hay restriction for any type of livestock.

WEED CONTROL IN GRASS PASTURES AND HAYFIELDS

HERBICIDE	MOA	BROADCAST RATE/ACRE: AMOUNT OF FORMULATION	BROADCAST RATE/ACRE: POUNDS ACTIVE INGREDIENT	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
ESTABLISHED FORAGE GRASSES					
2,4-D various trade names 4 lb/gal	4	1-2 qt	1-2	See label	Apply to weeds 2-4" tall. Use low rates for small weeds, high rates for larger weeds. Apply low volatile esters from October through March. Apply only non-volatile AMINE or ACID formulations from late March through September. Do not graze lactating dairy animals for 14 days after treatment, or cut for hay for all types of livestock for 30 days after treatment. (Grazing and haying restrictions may vary – refer to product label). If thistles are present, apply while they are in the rosette stage of growth.
2,4-D (mixed amines) Hi-Dep 3.8 lb/gal	4	1-2 qt	0.95-1.9	48 H	Hi-Dep consists of *dimethylamine* and *diethanolamine* salts of *2,4-D* formulated for low spray volume applications. DO NOT graze dairy cattle for 7 days after application. DO NOT cut for hay for 30 days after applications.
dicamba Banvel 4 lb/gal	4	1-3 pt	0.5-1.5	24 H	Controls a wide range of broadleaf weeds. There are no grazing restrictions for animals other than lactating dairy animals. Restrict grazing for lactating dairy animals as follows: **Days Before Grazing / Days Before Hay Harvest** Up to 1 pint: 7 / 37 Up to l quart: 21 / 51 Up to 2 quarts: 40 / 70
Clarity 4 lb/gal		1-3 pt			Remove meat animals from treated areas 30 days prior to slaughter. If thistles are present, apply while they are in the rosette stage of growth. This treatment will severely injure or kill clovers and alfalfa.
Xtendimax 2.9 lb/gal		11-44 fl oz	0.25-1 lb		Controls numerous annual and perennial broadleaf weeds. Rates above 44 oz/A are permitted only for spot treatments that do not exceed more than 1000 sq ft of treated area per acre. Do not broadcast apply more than 44 fl oz/A. Grass grown for hay requires a 7 D waiting period between application and harvest. Do not graze lactating dairy animals for 7 and 21 days after treatments of 22 and 44 oz/A, respectively. Do not feed hay that was harvested before 37 and 51 days after treatments of 22 and 44 oz/A, respectively, to lactating dairy animals. See label for grazing and haying restrictions following spot applications. Do not exceed a total of 88 fl oz/A/year.
carfentrazone Aim EW 1.9 lb/gal Aim EC 2 lb/gal	14	1-2 fl oz 1-2 fl oz	0.015-0.03 0.016-0.031	12H	Controls numerous annual broadleaf weeds less than 3" tall. *Carfentrazone* does not control weedy grasses or sedges. Apply with a non-ionic surfactant at 0.25% v/v, or a crop oil concentrate at 1% v/v. For most weeds, *carfentrazone* is tank-mixed with other registered grass pasture and hay field herbicides. Combining *carfentrazone* with other herbicides often increases overall control and speed of control. There are no grazing or haying restrictions for any type of livestock for *carfentrazone*.
2,4-D + *dicamba* Weedmaster 2.87 lb + 1 lb/gal Outlaw 1.45 + 1.1 lb/gal	4 + 4	2-4 pt 2-4 pt	0.72 + 0.25-1.44 + 0.5 0.36 + 0.27-0.72 + 0.55	48 H	For control of a broad spectrum of weeds, apply in late spring or early summer to annual or perennial broadleaf weeds before flowering. Do not graze lactating dairy animals within 7 days. There is no restriction between application and grazing for non-lactating animals. Do not cut for hay within 37 days after treatment. Do not graze meat animals in treated areas within 30 days of slaughter. If thistles are present, apply while they are in the rosette stage of growth. For horsenettle, use the high rate. Weedmaster and Outlaw will severely injure or kill clovers or alfalfa.

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
ESTABLISHED FORAGE GRASSES *(continued)*					
2,4-D + *picloram* Grazon P+D GunSlinger HiredHand 2 lb + 0.54 lb/gal	4 + 4	2-4 pt	0.5 + 0.13-1 + 0.26	48 H	Controls annual and perennial broadleaf weeds. Use only in PERMANENT GRASS PASTURES AND HAYFIELDS. *2,4-D + picloram* may also be applied at 4 pt/A or less to permanent pastures that will be seeded with cool-season grasses (ryegrass, tall fescue). Delay planting for 21 days after application. Small grains should not be planted in treated areas for 60 days after application. For permanent pastures that have been over seeded with small grains or ryegrass, do not apply at rates in excess of 1.5 pt/A, and until over seeded ryegrass or small grains are well-established and at the tillering stage of growth. Clover seeding restrictions are as follows: fall-seeding is permitted if Grazon P+D at 2 pt/A or less is applied no later than June (4 month plant back). Spring (February-March) seeding is permitted the following spring for Grazon P+D at 2-3pt/A if applied no later than September 15 the previous year. The Gunslinger label indicates that legume establishment may not be successful if done within 12 months of application. *2,4-D + picloram* may be used at 1.5 pt/A after establishment of newly sprigged bermudagrass once stolons have reached 6" in length. This herbicide is not recommended for use in rotational systems that use broadleaf crops or in temporary summer or winter grazing grass systems unless temporary grass is seeded into a permanent pasture. Do not graze lactating dairy animals on treated areas within 7 days after application. There are no grazing restrictions for non-lactating dairy animals, horses, sheep, goats, and other types of livestock. Do not harvest grass cut for hay from treated areas for 30 days. Do not use hay from treated areas for composting or mulching of susceptible broadleaf crops. Withdraw meat animals from treated forage at least 3 days before slaughter. Do not transfer livestock from treated areas, or from *2,4-D + picloram*-treated hay feeding areas to broadleaf crop areas without first allowing livestock to graze for 7 days on an untreated grass pasture. Do not store or feed *2,4-D + picloram* treated hay on fields that will be planted to broadleaf crops. Do not use manure from livestock grazing on *2,4-D + picloram* treated areas on gardens, broadleaf crops, or orchards. *2,4-D + picloram* will injure or kill legumes such as clovers and alfalfa. Restricted Use Herbicide.
picloram + *fluroxypyr* Surmount 1.2 + 0.96 lb/gal	4 + 4	1.5-6 pt	0.22 + 0.18 to 0.9 + 0.72	12 H	Controls a wide range of herbaceous and woody broadleaf plants. Use 1.5-2 pt/A for herbaceous broadleaf weeds. Use 3-6 pt/A for woody brush and trees. Use only in PERMANENT GRASS PASTURES AND HAYFIELDS. This herbicide is not recommended for use in rotational systems that use broadleaf crops or in temporary summer or winter grazing grass systems unless temporary grass is seeded into a permanent pasture. Do not graze lactating dairy animals on treated areas within 14 days after application. There are no grazing restrictions for non-lactating dairy animals, horses, sheep, goats, and other types of livestock. Do not harvest grass cut for hay from treated areas for 7 days. Do not use hay from treated areas for composting or mulching of susceptible broadleaf crops. Withdraw meat animals from treated forage at least 3 days before slaughter. Do not transfer livestock from treated areas, or from Surmount treated hay feeding areas to broadleaf crop areas without first allowing livestock to graze for 7 days on an untreated grass pasture. Do not store or feed Surmount treated hay on fields that will be planted to broadleaf crops. Do not use manure from livestock grazing on Surmount treated areas on gardens, broad leaf crops, or orchards. Surmount will injure or kill legumes such as clovers and alfalfa. New legume plantings may not be successful if seeded within 1 year of application. Restricted Use Herbicide.

WEED CONTROL IN GRASS PASTURES AND HAYFIELDS

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
ESTABLISHED FORAGE GRASSES *(continued)*					
triclopyr + *fluroxypyr* PastureGard 1.5 + 0.5 lb/gal	4 + 4	1.5-8 pt	0.3 + 0.1 to 1.5 + 0.5	12 H	Controls a wide range of herbaceous and woody broadleaf plants. Use 1.5-3 pt/A for herbaceous broadleaf weeds. Use 2-8 pt/A for woody brush and trees. Do not graze lactating dairy animals on treated areas during the growing season following application. There are no grazing restrictions for non-lactating dairy animals, horses, sheep, goats, and other types of livestock. Do not harvest grass cut for hay from treated areas for 14 days. Withdraw meat animals from treated forage at least 3 days before slaughter. Legumes may be planted 30 days after application. Do not reseed forage grasses for 21 days after application.
aminopyralid Milestone 2 lb/gal		4-7 fl oz	0.06-0.11	48 H	Apply to permanent grass pastures and hayfields. Controls numerous annual and perennial broadleaf weeds. Particularly effective for the control of horsenettle and tropical soda apple. There are no grazing or haying restrictions for Milestone for any type of livestock. Do not transfer livestock from treated pastures, or from Milestone treated hay feeding areas, to broad leaf crop areas without first allowing livestock to graze for 3 days on an untreated grass pasture. Do not store Milestone treated hay on fields that will be planted to broadleaf crops. Do not use manure from livestock grazing on Milestone treated areas on gardens, broadleaf crops, or orchards. Milestone will injure or kill legumes such as clovers and alfalfa. Do not plant legumes or broadleaf crops until a field bioassay has shown that the *aminopyralid* concentration in the soil will not injure broadleaf crops (see label for instructions on conducting field bioassay).
aminopyralid + *2,4-D* ForeFront GrazonNext 0.33 + 2.67 lb/gal	+ 4	1.5-2.6 pt	0.06 + 0.5 to 0.11 + 0.9	48 H	Apply to permanent grass pastures and hayfields. Controls numerous annual and perennial broadleaf weeds. Particularly effective for the control of horsenettle and tropical soda apple. Controls a wider spectrum of weed species than Milestone. There are no grazing restrictions for ForeFront and GrazonNext for any type of livestock. Do not harvest for hay within 7 days of application (all types of livestock). Do not transfer livestock from treated pastures, or from ForeFront or GrazonNext treated hay feeding areas, to broadleaf crop areas without first allowing livestock to graze for 3 days on an untreated grass pasture. Do not store or feed ForeFront or GrazonNext treated hay on fields that will be planted to broadleaf crops. Do not use manure from livestock grazing on ForeFront or Grazon Next treated areas on gardens, broadleaf crops or orchards. ForeFront and GrazonNext will injure or kill legumes such as clovers and alfalfa. Do not plant legumes or broadleaf crops until a field bioassay has shown that the *aminopyralid* concentration in the soil will not injure broadleaf crops (see label for instructions on conducting field bioassay).

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
ESTABLISHED FORAGE GRASSES *(continued)*					
aminopyralid + *metsulfuron* Chaparral DF 0.62 + 0.0945 lb/lb	 + 2	 1.5-3 oz	0.06 + 0.0009 to 0.12 + 0.018	48 H	Apply to permanent grass pastures and hayfields. Bermudagrass should be established for 60 days and tall fescue for 2 years prior to use. Apply with 0.25% v/v non-ionic surfactant/100 gal of spray mix. Controls numerous annual and perennial broadleaf weeds – particularly effective for the control of horsenettle and tropical soda apple. Also, controls 'Pensacola' bahiagrass. Controls a wider spectrum of weed species than Milestone. There are no grazing or haying restrictions for Chaparral for any type of livestock. Do not transfer livestock from treated pastures, or from Chaparral treated hay feeding areas to broad leaf crop areas without first allowing livestock to graze for 3 days on an untreated grass pasture. Do not store or feed Chaparral treated hay on fields that will be planted to broadleaf crops. Do not use manure from livestock grazing on Chaparral treated areas on gardens, broadleaf crops. or orchards. Chaparral will injure or kill legumes such as clovers and alfalfa. Do not plant legumes or broadleaf crops until a field bioassay has shown that the *aminopyralid* concentration in the soil that will not injure broadleaf crops (see label for instructions on conducting field bioassay). On tall fescue, applications in the early spring may suppress seedhead production and reduce hay yield. To minimize injury to tall fescue: a) tank-mix *2,4-D*; b) use the lowest recommended rate for the target weeds; c) use a 1/16 to 1/8% v/v surfactant concentration; d) make applications in the late spring or fall months after 5-6" of new growth has occurred; and e) do not add a surfactant when applied with liquid N.
2,4-D + *triclopyr* Crossbow 2 lb + 1 lb/gal	4 + 4	 1-6 qt			Apply to established grass pastures for control of broadleaf weeds and woody plants. Woody plant control requires 6 qt/A or higher rate. Desirable forage broadleaf plants such as clover or alfalfa may be killed if sprayed. Grazing and haying restrictions**:** Grazing or harvesting of green forage: (1) Lactating dairy animals – 2 gal/A or less; Do not graze or harvest green forage from treated area for 14 days after treatment. Greater than 2-4 gal/A: Do not graze or harvest green forage until next growing season. (2) Other livestock – 2 gal/A or less: No grazing restrictions. Greater than 2-4 gal/A: Do not graze or harvest green forage from treated areas for 14 days after treatment. Note: If less than 25% of a grazed area is treated, there is no grazing restriction. Haying (harvesting of dried forage): (1) Lactating dairy animals: Do not harvest hay until next growing season. (2) Other livestock: Two gal/A or less: Do not harvest hay for 7 days after treatment. Greater than 2-4 gal/A: Do not harvest hay for 14 days after treatment.
triclopyr + *clopyralid* Redeem 2.25 lb + 0.75 lb/gal	4 + 4	 1.5-4 pt	0.38-1.12 + 0.14-0.38	48 H	Apply for control of broadleaf weeds. Use 2.5-4 pt/A to control dogfennel, spiny amaranth, and horsenettle. Desirable forage broadleaf plants such as clover or alfalfa may be killed if sprayed. Do not apply to newly-seeded or sprigged grasses until they are well established as evidenced by tillering, development of a secondary root system and vigorous growth. Grazing and haying restrictions: Grazing or harvesting of green forage: (1) Lactating dairy animals – Do not graze or harvest green forage from treated area for 14 days after treatment. (2) Other livestock – No grazing restrictions. Haying (harvesting of dried forage): (1) Lactating dairy animals: Do not harvest hay until next growing season. (2) Other livestock: Do not harvest hay for 7 days after treatment.

WEED CONTROL IN GRASS PASTURES AND HAYFIELDS

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
ESTABLISHED FORAGE GRASSES *(continued)*					
imazapic Impose Panoramic 2 lb/gal	2	4-8 fl oz	0.063-0.125	12 H	Apply to established bermudagrass. Do not apply to other forage grass species. Provides post-emergence control of crabgrass, sandbur, broadleaf signalgrass, johnsongrass, vaseygrass, nutsedge, and certain other weeds. This herbicide does not control pricklypear cactus, dallisgrass, and goosegrass. Apply in late spring to mid-summer after bermudagrass has reached 100% green-up growth stage. Do not apply during spring transition or to dormant bermudagrass. *Imazapic* is not recommended on newly sprigged or seedling bermudagrass during the grow-in period. Research has shown that *imazapic* will moderately injure (yellowing of bermudagrass foliage), and suppress bermudagrass growth for 20-40 days after application. Additionally, bermudagrass hay yields may be reduced 30-50% at the first hay harvest (usually 30 days) following application. *Imazapic* should not be applied unless a bermudagrass yield reduction is acceptable. No bermudagrass hay yield reduction has been observed at the 2nd, 3rd, and 4th hay harvest following an application at 4 fl oz/A. Add a non-ionic surfactant (preferred) at 0.25% v/v or methylated seed oil at 1.5-2 pt/A to the spray mix. The use of 2-3 pt/A of 28% N, 32% N, 10-34-0, or *ammonium sulfate* in combination with the recommended rate of surfactant may increase control. Liquid fertilizer may be used as the sole spray carrier for *imazapic*, but control may be reduced. Do not add a surfactant or methylated seed oil if liquid fertilizer is used as the sole spray carrier. Annual ryegrass may be seeded 60 days after application. There is no grazing restriction for *imazapic* for any type of livestock. Do not cut for hay for 7 days after application.
halosulfuron Sandea 75WG	2	0.67-1.33 oz	0.03-0.06	12 H	Controls annual and perennial broadleaf weeds and sedges in established grass pastures and hayfields. Growers must delay hay harvesting for 37 days after application. It is recommended to make an application as soon as possible after removal of hay. No more than 2 applications or 1.33 oz/A of product by weight (0.062 lb ai/A)/12-month period. Apply to sedges 6-10” tall. There is no pre-grazing interval for lactating and non-lactating animals in grass pastures. Applications are recommended with a non-ionic surfactant at 0.25% vol/vol. For best results, do not graze or mow for 2 weeks before or after application.
sulfosulfuron OutRider 75DF	2	1.33 oz	0.062	12 H	Recommended for the control of emerged johnsongrass and sedge species in bermudagrass and bahiagrass forage systems. DO NOT use OutRider on other forage grass species such as tall fescue. OutRider does not control annual grasses such as crabgrass and sandbur, or perennial grasses such as dallisgrass and vaseygrass. Apply to johnsongrass from a minimum of 18” tall to the heading stage. Apply to sedges 6-10” tall. Add a non-ionic surfactant at 0.25% v/v. OutRider may be tank-mixed with other pasture herbicides; however, *amine* formulations may reduce johnsongrass control. Grazing may occur immediately before or after application; however, control may be reduced by grazing of johnsongrass foliage. For best results, do not graze or mow for 2 weeks before or after application.
pendimethalin Prowl H_2O 3.8 lb/gal	3	3.1-4.2 qt	3-4	24 H	Provides pre-emergence control of annual grasses such as crabgrass and sandbur, and some annual broadleaf weeds. Prowl H_2O is labeled for established bahiagrass, bermudagrass, orchardgrass, tall fescue, and other perennial grasses. Applications to newly sprigged bermudagrass, tall fescue, bahiagrass, and other perennial forage grasses are not recommended. Apply Prowl H_2O in the late winter and early spring. In most areas of Georgia, this would be February through early March. Prowl H_2O has no pre-harvest or pre-grazing interval restriction. Split applications are permitted between cuttings for bermudagrass and other labeled warm-season species that were initially treated in late winter. Prowl H_2O may be tank-mixed with other herbicides registered for use on forage bermudagrass.

WEED CONTROL IN GRASS PASTURES AND HAYFIELDS

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
ESTABLISHED FORAGE GRASSES *(continued)*					
triclopyr Remedy 4 lb/gal Vastlan 4 lb/gal	4	1-2 pt	0.5-1	12 H	Apply to established grass pastures for control of broadleaf weeds and brush. *Triclopyr* may be tank-mixed with *2,4-D* for broader spectrum weed control and control of sensitive woody species. Desirable forage broadleaf plants such as clover or alfalfa may be killed if sprayed. Applications at air temperatures > 85°F. may cause moderate to severe bermudagrass injury for 2-3 weeks. Grazing restrictions: Grazing or harvesting green forage: (1) Lactating dairy animals:2 qt/A or less: do not graze or harvest green forage from treated areafor 14 days after treatment. (2) Other livestock: 2 qt/A or less: no grazing restrictions. Haying restriction: (1) Lactating dairy animals: Do not harvest hay until the next growing season. (2) Other livestock: 2 qt/A or less: Do not harvest hay for 7 days after treatment. Slaughter Restrictions: Withdraw livestock from grazing on treated grass or consumption of treated hay at least 3 days before slaughter.
glyphosate Roundup PowerMax 5.5 lb/gal supplemental label	9	10 fl oz	0.43	4 H	Apply after the first bermudagrass cutting when bermudagrass has not yet initiated regrowth. Controls crabgrass, field sandbur, seedling johnsongrass, and most annual grasses. Applications made after regrowth has begun will damage bermudagrass. DO NOT graze or cut for hay for 28 days after application. Make only 1 application per year. DO NOT make an application after the first cutting if the field has previously received a *glyphosate* application during the winter months.
diflufenzopyr + *dicamba* Overdrive 76.4% DF 0.2 lb + 0.5 lb/gal	19 + 4	4-8 oz	0.05 + 0.125 to 0.1 + 0.25	24 H	Controls annual and perennial broadleaf weeds. Add a non-ionic surfactant at 0.25% v/ v or methylated seed oil at 2 pt/A to the spray mix. *Diflufenzopyr* has been shown to improve the activity of "auxin-like" herbicides such as *triclopyr*, *clopyralid*, and *picloram*. May be tank-mixed with Grazon P+D, Remedy, Redeem, *2,4-D*, and Cimarron to increase spectrum of weed species controlled. Overdrive is rainfast within 4 hours after application. DO NOT plant any rotational crop within 30 days of an Overdrive application. There are no grazing or haying restrictions for Overdrive for any type of livestock.
metsulfuron Metsulfuron 60EG Patriot 60DF	2	0.1-0.4 oz	0.004-0.015	4 H	Apply to established bermudagrass for the control of 'Pensacola' bahiagrass and certain broadleaf weeds. Bermudagrass should be established for 60 days and tall fescue for 2 years prior to use. Apply 1 pt-1 qt non-ionic surfactant/100 gal of spray mix. On tall fescue, applications in the early spring may suppress seedhead production and reduce hay yield. To minimize injury to tall fescue: a) tank-mix *2,4-D* with *metsulfuron*; b) use the lowest recommended rate for the target weeds; c) use a 1/16-1/8% v/v surfactant concentration; d) make application s in the late spring or fall months; e) do not exceed 0.2 oz/A and; f) do not add a surfactant when applied with liquid N. *Metsulfuron* tank-mixes with liquid fertilizer are not recommended for 'Pensacola' bahiagrass control. Not effective for the control of 'Common' and 'Argentine' bahiagrass. Spot treatments of *metsulfuron* at 1 oz/100 gal of water may be used for the control of multi flora rose and blackberry. Pasture legumes will be severely injured or killed by *metsulfuron*. There is no grazing or haying restriction for *metsulfuron*. *Metsulfuron* may be tank-mixed with Grazon P+D, Banvel, *2,4-D*, Weedmaster, Milestone, ForeFront, and Remedy or purchased as a co-pack product with *2,4-D + dicamba*.

WEED CONTROL IN GRASS PASTURES AND HAYFIELDS

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
ESTABLISHED FORAGE GRASSES *(continued)*					
metsulfuron 48% + *chlorsulfuron* 15% Cimarron Plus 63 DF	2 + 2	0.125-1.25 oz	0.004-0.04 + 0.001-0.01		Apply to established bermudagrass for the control of 'Pensacola' bahiagrass and certain broadleaf weeds. Bermudagrass should be established for 60 days and tall fescue for 2 years prior to use. Apply 1 pt-1 qt non-ionic surfactant/100 gal of spray mix. On tall fescue, applications in the early spring may suppress seedhead production and reduce hay yield. To minimize injury to tall fescue: a) do not use more than 0.5 oz product/A; b) use the lowest recommended rate for the target weeds; c) use 1/16-1/8% v/v surfactant concentration; d) make applications in the late spring or fall months; e) do not exceed 0.3 oz product/A, and; f) do not add a surfactant when applied with liquid N. Cimarron Plus tank-mixes with liquid fertilizer are not recommended for 'Pensacola' bahiagrass control. Not effective for the control of Common and Argentine bahiagrass. Pasture legumes will be severely injured or killed by Cimarron Plus. There are no grazing or haying restrictions for Cimarron Plus. Cimarron Plus may be tank-mixed with Grazon P+D, Banvel, *2,4-D*, Weedmaster, and Remedy.
metsulfuron 60 DF + *2,4-D* + *dicamba* 2.9 + 1 lb/gal Cimarron Max		0.25 oz + 1 pt	0.009 + 0.4 + 0.125	4 H	Cimarron Max is a 2-part (co-pack) product used for annual and perennial broadleaf weed control in bermudagrass pastures. Also controls Pensacola bahiagrass. Bermudagrass should be established for 60 days and tall fescue for 2 years prior to use. Apply 1 pt-1 qt non-ionic surfactant/100 gal of spray mix. On tall fescue only, applications in the early spring may suppress seedhead production and reduce hay yield. To minimize injury to tall fescue: a) use the lowest recommended rate for the target weeds; b) use 1/16-1/8% v/v surfactant concentration; c) make applications in the late spring or fall months; and, d) do not add a surfactant when applied with liquid N. Cimarron Max tank-mixes with liquid fertilizer are not recommended for 'Pensacola' bahiagrass control. Not effective for the control of Common and Argentine bahiagrass. Pasture legumes will be severely injured or killed by Cimarron Max. There is no grazing restriction for non-lactating animals for Cimarron Max. The grazing restriction for lactating dairy animals is 7 days. Do not harvest for hay for 37 days after treatment. Remove meat animals from treated areas 30 days prior to slaughter.
chlorsulfuron Telar 75DF	2	0.25-1 oz	0.012-0.047	4 H	Controls many broadleaf weeds such as blackberry, pigweeds, and wild radish. Not effective for the control of horsenettle and common ragweed. May be used at rates up to 0.5 oz/A in tall fescue. In bermudagrass and bahiagrass rates as high as 1 oz/A may be used. Add a non-ionic surfactant at 0.25% v/v to the spray mix. *Chlorsulfuron* has no grazing or haying restriction for any type of livestock.
nicosulfuron 56.2% + *metsulfuron* 15.0% Pastora 71.2 WDG	2 + 2	1-1.5 oz	0.035 to 0.053 + 0.009 to 0.014	4 H	Pastora is recommended only for use on bermudagrass that has been established for 1 year. Pastora can temporarily injure (yellowing, stunting) bermudagrass. Injury can be decreased by using Pastora during bermudagrass winter dormancy, during green-up with less than 2" of new growth and within 7 days after cutting for hay. Applications at other times may reduce bermudagrass production. Pastora is not recommended for use during bermudagrass "grow-in" from sprigs or seed. Applications to tall fescue, bahiagrass, overseeded winter annual forage grasses, and other perennial forage grasses are not labeled. This herbicide has shown good to excellent control of sandbur, Texas panicum, fall panicum, broadleaf signalgrass, and barnyardgrass less than 2" tall. Correct application timing is critical for control of annual grasses. Pastora has also shown excellent activity on Italian ryegrass, johnsongrass, and Pensacola bahiagrass when treated as per label directions. Pastora at 1 oz/A applied twice also has good activity on vaseygrass (see supplemental label). Broadleaf weeds controlled by Pastora include bitter sneezeweed, buttercup, chickweed sp., Carolina geranium, curly dock, dogfennel, henbit, horseweed, musk thistle, smartweed sp., and wild garlic. A non-ionic surfactant at 0.25% v/v is the preferred adjuvant for Pastora. This herbicide has no grazing or haying restriction for any type of livestock

WEED CONTROL IN GRASS PASTURES AND HAYFIELDS

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
ESTABLISHED FORAGE GRASSES *(continued)*					
quinclorac Facet L 1.5 lb/gal		12-64 fl oz	0.14-0.75 lb		May be used to control seedling broadleaf weeds and annual grasses, including crabgrass, annual foxtails, and signalgrass that is 0-2" in height in bermudagrass, fescue, orchardgrass, and overseeded ryegrass. Apply with 2 pt/A of crop oil concentrate or methylated seed oil to enhance efficacy. Do not cut for hay within 7 days after treatment. There is no grazing restriction following applications. Do not apply more than a total of 64 fl oz/A/year.
POST-EMERGENCE - Spot or Wiper Applications					
glyphosate Roundup WeatherMax 5.5 lb/gal Roundup Original 4 lb/gal	9	Rate varies with species and application	Rate varies with species and application	4 H	*Glyphosate* may be applied in wiper applicators to weeds emerged above the forage grass, or applied as a spot treatment. Further applications may be made in the same area at 30-day intervals. Forage grasses, alfalfa, or clover coming in contact with the *glyphosate* will be injured or killed. Remove domestic livestock before application and wait 7 days after application before grazing livestock or harvesting. Other brands of *glyphosate* may also be labeled for this use.
tebuthiuron Spike 20P 20% pellet	7	See label			Spike 20P pellets may be applied as a spot treatment in perennial summer grass pastures for control of individual trees or scattered stands of brush. Apply 0.75 oz/100 sq ft of soil surface over the root systems of clumps of brush. Apply in early spring. Stands of cool season grasses such as fescue may be reduced by Spike application. Applications to or near pine trees will cause injury or death of the tree. Do not cut for hay for 1 year after application. Grazing is allowed after application if 20 lb/A or less is used.
MIXTURES - Grass-Lespedeza, Grass-Clover					
2,4-D amine 4 lb/gal	4	0.5-1 pt	0.25-0.5	48 H	Apply only 1 treatment/year to perennial clovers. *2,4-D amine* will cause slight to moderate injury to legumes. Refer to specific herbicide label for use information.
CONVERSION TO FUNGUS-FREE FESCUE					
paraquat Firestorm 3 lb gal Gramoxone Inteon 2 lb/gal	22	0.7-1.3 pt 1-2 pt	0.25-0.5	12 H 24 H	Apply *paraquat* in the fall to actively growing, endophyte-infected fescue 2-3 weeks prior to planting endophyte-free fescue. Apply *paraquat* again at planting. Apply in 20-40 gal of water/A. Always add surfactant when using *paraquat*. DO NOT graze the new planting for 60 days or until the new growth is 6" tall.
glyphosate RoundupWeatherMax Roundup Original Max Roundup PowerMax 5.5 lb/gal	9	See remarks	See remarks	4 H	Apply in the fall at 22 fl oz/A to endophyte-infected fescue 3-4 weeks prior to planting endophyte-free fescue. Tall fescue should have 6-12" of new growth before the first application. Apply again at planting at 11 fl oz/A. This treatment provides some suppression of common bermudagrass also. There is no waiting period between application and grazing if total application rate is less than 2 qt/A. Other brands of *glyphosate* may also be labeled for this use.

WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

Patrick E. McCullough, Extension Agronomist – Weed Science

Not all herbicides are labeled for use on all forage crops. Refer to the recommendations shown for a specific herbicide or refer to the herbicide label.

TIME OF APPLICATION	PPI	PPI	PRE	PRE	PRE	POST	POST
	benefin **(Balan)**	**EPTC (Eptam)**	**Chateau**	**Kerb**	**Prowl**	***2,4-D***	***2,4-DB***
amaranth, spiny	G	G	E	P	F-G	F-G	F-G
bahiagrass	P	P	P	P	P	P	P
bermudagrass	P	P	P	P	P	P	P
bitter sneezeweed	P	P		P		E	G
blackberry	P	P		P	P	P	P
bracken fern	P	P		P	P	P	P
briars (Smilax)	P	P		P	P	P	P
broomsedge	P	P		P	P	P	P
buttercup	P	P		P	P	E	F
camphorweed	P	P		P	P	P	P
chickweed	F	E	E	G	F	P	P
crabgrass	E	G	G	F	G	P-F	
crotalaria, showy	P	P	G	P	P	G	
cudweed	P	P		P		F	
curly dock	P	P	G	P	P	F	P
dallisgrass	P	P	P	P	P	P	P
dandelion	P	E	G	P	P	E	G
dodder	P	P		E		P	P
dogbane, hemp	P	P			P	P-F	P
dogfennel	P	P		P	P	F	P
evening primrose	F	F-G	E	P		E	G
foxtails, green & yellow	G	G	F	P	F	P	P
gallberry	P	P		P	P	G	P
goldenrod	P	P		P	P	F	P

Key: E – Excellent; G – Good; F – Fair; P – Poor Control; A blank space indicates weed response is not known.

[1] Seedling johnsongrass only.

WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

Not all herbicides are labeled for use on all forage crops. Refer to the recommendations shown for a specific herbicide or refer to the herbicide label.

TIME OF APPLICATION	PPI	PPI	PRE	PRE	PRE	POST	POST
	***benefin* (Balan)**	**EPTC (Eptam)**	**Chateau**	**Kerb**	**Prowl**	***2,4-D***	***2,4-DB***
henbit	F	G	E	P	F-G	P	P
honeysuckle	P	P		P	P	E	P
horsenettle	P	P		P	P	P	P
horseweed	P	P	G-E	P	P	G	P
Italian ryegrass	G	E		G		P	P
johnsongrass	G[1]	G[1]		P	G[1]	P	P
kudzu	P	P		P	P	P-F	P
Lespedeza, Sericea	P	P			P	P	P
little barley	G	G		E		P	P
maypop passion flower	P	P		P	P	P	P
mayweed				P		F	P
nettle, stinging	P	P		P	P	P	P
nutsedge	P	F	P	P	P	P	P
palmetto	P	P		P	P	P	P
perilla mint	P	P			P	P-F	
persimmon	P	P		P	P	P	P
pigweed species	G	G	E		F-G	G-E	G
plantain(s)	P	G	F	F	P	G-E	F
pokeweed, common	P	P		P	P	G	G
prickly pear	P	P		P	P	P	P
ragweed, common	P	P	G-E	P	P	E	G
red sorrel	P	P		P	P	P	P
rush species	P	P		P	P	G	P
sandbur	E	G		P	G	P	P
shepherdspurse	P	G	E	G	F	E	G
sicklepod	P	F	P	P	P	G	F
sida, arrowleaf & prickly	P	P	G-E	P	P	G	P
smartweed(s)	P	P	F	P	P	F	F

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WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

Not all herbicides are labeled for use on all forage crops. Refer to the recommendations shown for a specific herbicide or refer to the herbicide label.

TIME OF APPLICATION	PPI	PPI	PRE	PRE	PRE	POST	POST
	benefin **(Balan)**	**EPTC (Eptam)**	**Chateau**	**Kerb**	**Prowl**	***2,4-D***	***2,4-DB***
smutgrass	P	P		P	P	P	P
swinecress	P	G		F		E	F
Texas panicum	G-E	G		P	F-G	P	P
thistles	P	P		P	P	E	F
tropical soda apple	P	P		P	P	P	P
vaseygrass	P	P		P	P	P	P
vervain, blue							
Virginia pepperweed	P	G		P	P-F	G	E
wax myrtle	P	P		P	P	G	P
wild cherry	P	P		P	P	E	P
wild garlic	P	P	P	P	P	G-E	P
wild plum	P	P		P	P	E	P
wild radish	P	P-F	G-E	P	P	G	P
wild rose	P	P		P	P	G	P
wooly croton	P	P		P	P	G	P

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WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	bromoxynil **(Buctril)**	**Chaparral**	**Cimarron Max**	**Cimarron Plus**	**Crossbow**	***dicamba*** **(Banvel, Clarity)**	**ForeFront, Grazon Next**	**Grazon P+D**
amaranth, spiny	P	E	E	E		G-E	E	G-E
bahiagrass	P	G	F-G	G	P	P	P	P
bermudagrass	P	P	P	P	P	P	P	P
bitter sneezeweed		E	E	E	E	E	E	E
blackberry	P	G-E	F	E	G	F	P	F
bracken fern			G		G	G		F
briars (Smilax)	P				P	F		
broomsedge	P		P	P	P	P	P	P
buttercup		G-E	E	E	E	P	E	E
camphorweed		G		G			G	G-E
chickweed	F	E	E	E	F	G	G	P
crabgrass	P		P	P	P	P	P	P
crotalaria, showy		G				G	G	E
cudweed	P	G	G	G	E	E	G-E	G
curly dock		G-E	G-E	G-E	G	E	G-E	G-E
dallisgrass	P		P	P	P	P	P	P
dandelion	P				E	E	G-E	E
dodder					P	P		
dogbane, hemp		P	P	P	F-G	F	P	F
dogfennel	P	P-F	G-E	F-G	E	E	F	G-E
evening primrose		G	G	G	E	E	E	E
foxtails, green & yellow	P		P	P	P	P	P	P

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WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	***bromoxynil* (Buctril)**	**Chaparral**	**Cimarron Max**	**Cimarron Plus**	**Crossbow**	***dicamba* (Banvel, Clarity)**	**ForeFront, Grazon Next**	**Grazon P+D**
gallberry	P				E	E		
goldenrod	P	P	G-E	P	G	G	G	G
henbit	F	G-E	E	E	E	G	F	P-F
honeysuckle	P				E	E		F
horsenettle	P	G-E	F	P-F	P-F	G	E	G-E
horseweed	P	G-E	E	F	G	E	E	E
Italian ryegrass	P		P-F	P-F	P	P	P	P
johnsongrass	P		P	P	P	P	P	P
kudzu	P	G	P-F	P-F	F-G	G	G	F
lespedeza, Sericea	P	P	F-G	G-E	P-F	P		P
little barley	P				P	P		P
maypop passion flower		P	P	P			P	P-F
mayweed	P		G	G	G	E	G-E	G-E
nettle, stinging		G-E	F-G	F-G	F-G	P	G	E
nutsedge	P		P	P	P	P	P	P
palmetto	P	P	P	P		F		
perilla mint					F-G	F-G		F-G
persimmon	P				G	E		P
pigweed species	F	G-E	E	E	E	E	E	E
plantain(s)	P	G-E	E	E	G	F	G	F-G
pokeweed, common	P	P		P	G	G	G	F
prickly pear	P	P	P	P		F	P	F-G

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WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	bromoxynil **(Buctril)**	**Chaparral**	**Cimarron Max**	**Cimarron Plus**	**Crossbow**	***dicamba*** **(Banvel, Clarity)**	**ForeFront, Grazon Next**	**Grazon P+D**
ragweed, common	G	G-E	G	G	E	E	E	E
red sorrel		E	G	G-E	E	G	E	
rush species	P	P	P	P	F-G	P		
sandbur	P		P	P	P	P	P	P
shepherdspurse	G				E	E	E	E
sicklepod		G	G	G	E	E	E	E
sida, arrowleaf & prickly	P		G	G	P-F	G	E	E
smartweed(s)	G	G-E	E	E	G-E	G	E	E
smutgrass	P		P	P	P	P	P	P
swinecress	E					E	E	E
Texas panicum	P			P	P	P	P	P
thistles	P	E	G-E	F-G	E	G	E	E
tropical soda apple	P	G-E	P	P	F	F-G	G-E	G-E
vaseygrass	P		P	P	P	P	P	P
vervain, blue							G	G
Virginia pepperweed	G					E	G	E
wax myrtle	P	P				E		
wild cherry	P					P	E	
wild garlic	P	G	G-E	G-E		F	F	F
wild plum	P					E	E	
wild radish	F-G	G-E	G-E	G-E	E	E	E	
wild rose	P	G	F	F	E	E	F	F
wooly croton	P	G-E	G-E	G	E	E	E	E

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WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	hexazinone **(Velpar)**	***imazamox*** **(Raptor)**	***imazapic*** **(Impose)**	***imazethapyr*** **(Pursuit)**	***metribuzin*** **(Sencor)**	***Metsulfuron***	**Milestone**	***paraquat***
amaranth, spiny	F-G	F-G	G	F-G	P-F	E	G	F-G
bahiagrass	P		G-E		P	G	P	P
bermudagrass	P	P	P	P	P	P	P	P
bitter sneezeweed						E	G-E	
blackberry	F				P	G	G	P
bracken fern	F					G	G	P
briars (Smilax)	F				P			P
broomsedge	P	P	P	P	P	P	P	P
buttercup	G				G	E	G-E	G
camphorweed				P		G		P
chickweed	E	G		F	E	P	F	E
crabgrass	P	F	F-G	F	F	P	P	F
crotalaria, showy								
cudweed						G	E	G
curly dock	P-F	P-F		P-F		E	E	P
dallisgrass			P		P	P	P	P
dandelion	E	F-G		P-F	G	G-E	P	G
dodder								G-E
dogbane, hemp							P	
dogfennel						P-F	P	P
evening primrose	E				G	G	E	P-F
foxtails, green & yellow	P-F	G	F-G	G	P	P	P	F
gallberry	P				P			P

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WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	hexazinone **(Velpar)**	***imazamox*** **(Raptor)**	***imazapic*** **(Impose)**	***imazethapyr*** **(Pursuit)**	***metribuzin*** **(Sencor)**	***Metsulfuron***	**Milestone**	***paraquat***
goldenrod						G-E	G	P
henbit	G-E	F		F	G	E	F-G	G
honeysuckle					P			P
horsenettle		P	P	P	P	P	E	P
horseweed	F	P	P	P	P	F	E	P
Italian ryegrass	G	G	F	P	P	P		G
johnsongrass	P	F	F-G	P	P	P	P	P
kudzu			P	P	P	P-F	F-G	P
lespedeza, Sericea						G-E		P
little barley	E				P	P	P	G-E
maypop passionflower		P		P	P	P	P	P
mayweed	F-G					G		E
nettle, stinging						F-G	E	
nutsedge	P	P-F	G	F	P	P	P	P
palmetto	P		P		P	P	P	P
perilla mint							P	
persimmon	F				P		P	P
pigweed species	G	G-E	G-E	G-E	G	E	E	G
plantain(s)	F-G	P		P	P	E	P	P
pokeweed, common						P	F	
prickly pear	P				P	P	P	P
ragweed, common	F	F	F	F	G	G	E	G
red sorrel						E		P-F

Key: E – Excellent; G – Good; F – Fair; P – Poor Control; A blank space indicates weed response is not known.

WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	hexazinone **(Velpar)**	***imazamox*** **(Raptor)**	***imazapic*** **(Impose)**	***imazethapyr*** **(Pursuit)**	***metribuzin*** **(Sencor)**	***Metsulfuron***	**Milestone**	***paraquat***
rush species		P	P	P		P		P
sandbur			G-E		F	P	P	G
shepherdspurse	E	E	E	E	E	G	P	G
sicklepod			G		F	G	P	F-G
sida, arrowleaf & prickly		P-F		P-F	F	F	P	P
smartweed(s)	F-G	G-E		G-E		E	E	E
smutgrass	G-E	P	P	P	P	P	P	P
swinecress	E	G	E		E		P	E
Texas panicum	P		P-F		P-F	P	P	G
thistles	E	P		P	G	F	E	G
tropical soda apple	F		P		P	P	E	P
vaseygrass			F		P	P	P	P
vervain, blue							F	
Virginia pepperweed	E	G		G	G		P	G
wax myrtle	P				P			P
wild cherry	E				P			P
wild garlic					P	G	P	E
wild plum	E	P	P	P	P			P
wild radish	E	G-E	E	G-E	E	G-E	P	P
wild rose		P	P	P	P	G	F	P
wooly croton	P	P		P	P	G	E	P

Key: E – Excellent; G – Good; F – Fair; P – Poor Control; A blank space indicates weed response is not known.

WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	hexazinone **(Velpar)**	***imazamox*** **(Raptor)**	***imazapic*** **(Impose)**	***imazethapyr*** **(Pursuit)**	***metribuzin*** **(Sencor)**	***Metsulfuron***	**Milestone**	***paraquat***
amaranth, spiny	G-E	P-F	P	P		G-E		E
bahiagrass		P	P	F		P	P	P
bermudagrass	P	P	P	F-G		P	P	P
bitter sneezeweed	G-E	E	E	P	E	E	E	E
blackberry		G	G-E	P	G	G	G-E	P-F
bracken fern		F	P	P	G	F	G	
briars (Smilax)		G	P	P	G	F	P	F
broomsedge	P	P	P	P		P	P	P
buttercup	E	F	E	P	G	G	E	E
camphorweed		E		P		E	E	P
chickweed	E	E	G	P	E	G-E	F	F
crabgrass	F	P	P	G-E		P	P	P
crotalaria, showy		E				E	E	G
cudweed		G	E	P		G	E	G
curly dock	G-E	F	E	P		G	E	E
dallisgrass		P	P	P		P	P	P
dandelion	G	G-E	G	P	G	E	E	E
dodder		P	P	P			P	P
dogbane, hemp		F-G	P	P		G	F	F
dogfennel	P	E	E		G	E	E	G
evening primrose	F	G		P	G	E	E	E
foxtails, green & yellow	F-G	P	P	E		P	P	P
gallberry		E	G	P			E	G

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WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	Pastora	**PastureGard**	**Redeem**	***sethoxydim* (Poast)**	**Spike**	**Surmount**	***Triclopyr* (Remedy)**	**Weedmaster**
gallberry		E	G	P			E	G
goldenrod	G	G	E	P		G	G	E
henbit	E	G-E	G	P	G	G	F	P
honeysuckle		P	P	P	G	G	P	E
horsenettle	P	P-F	F	P	F	E	P-F	F
horseweed		G	G	P		E	G	E
Italian ryegrass	G-E	P	P	E		P	P	P
johnsongrass	G-E	P	P	G		P	P	P
kudzu		G	G-E	P	P	F	G-E	F
lespedeza, Sericea		E					G-E	P
little barley		P	P	F		P	P	P
maypop passion flower		F		P				P
mayweed	G-E	G	E	P	E	G-E	G	G
nettle, stinging		E	F	P		G	G-E	F
nutsedge	P	P	P	P		P	P	P
palmetto		G	P	P	F	P	F	P
perilla mint		F		P		F	F-G	F-G
persimmon		G-F	P	P		G	F	F
pigweed species	G-E	G	G	P		G	E	E
plantain(s)	F	F	P	P		F	F	G-E
pokeweed, common		P	P	P		G	P	G
prickly pear		F	P	P		E	G[2]	P

Key: E – Excellent; G – Good; F – Fair; P – Poor Control; A blank space indicates weed response is not known.

[2] For prickly pear cactus use 20% v/v Remedy plus 80% diesel fuel. Apply only as a spot treatment, as this treatment will severely injure desirable grasses.

[3] Apply in spring after full spring greenup of vaseygrass, or after hay harvest.

WEED RESPONSE TO HERBICIDES USED IN PASTURE, HAY AND FORAGE CROPS

TIME OF APPLICATION	POST-EMERGENCE							
	Pastora	**PastureGard**	**Redeem**	***sethoxydim* (Poast)**	**Spike**	**Surmount**	***Triclopyr* (Remedy)**	**Weedmaster**
ragweed, common		E	E	P		E	E	E
red sorrel		F	F-G	P		E	E	P-F
rush species		P	P	P		P	F	
sandbur	G-E	P	P	G		P	P	P
shepherdspurse		G	G	P	G	G	E	E
sicklepod	E	G	G	P		E	E	E
sida, arrowleaf & prickly		F	P	P		E	P	E
smartweed(s)	G			P				G
smutgrass		P	P	P		P	P	P
swinecress		G	G	P		G	G	E
Texas panicum	G-E	P	P	E		P	P	P
thistles	G	G	E	P		G-E	F-G	G
tropical soda apple	P	G	P	P	P	E	G	F
vaseygrass	F[3]	P	P	P		P	P	P
vervain, blue						E		
Virginia pepperweed		G		P			P	E
wax myrtle		G		P	F			G
wild cherry		G	F	P		G	E	E
wild garlic		F		P		P		G
wild plum		G	P	P	G	G		P
wild radish	G-E	G	F	P		E	E	E
wild rose		E	P	P	G	E	E	E
wooly croton	E	F	F	P		E	G	E

Key: E – Excellent; G – Good; F – Fair; P – Poor Control; A blank space indicates weed response is not known.

[2] For prickly pear cactus use 20% v/v Remedy plus 80% diesel fuel. Apply only as a spot treatment, as this treatment will severely injure desirable grasses.

[3] Apply in spring after full spring greenup of vaseygrass, or after hay harvest.

PERENNIAL PEANUT WEED CONTROL

Patrick E. McCullough, Extension Agronomist – Weed Science

HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
		AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
POST-EMERGENCE					
2,4-D amine Weed Killer EPA Reg. No. 1386-43 -72693	4	1 pt	0.5	48 H	For control of many annual broadleaf species such as Mexican tea (Jerusalem oak), pigweeds, cutleaf eveningprimrose, etc. Can be applied any time during the season as long as the 30-day restriction on hay cutting is observed. May lead to slight yield decrease in "Florigraze", but "Arbrook" is more tolerant. Mixing 8 fl oz of *2,4-D amine* Weed Killer with 4 fl oz of Impose has been found to be an effective combination. *2,4-D amine* Weed Killer (Universal Crop Production Alliance, LLC) is the product that has been officially approved for use. Use this particular product rather than other non-approved *2,4-D* herbicides.
imazapic Impose 2.0 lb/gal	2	4 fl oz	0.063	12 H	Impose is effective on crabgrass, nutsedges, johnsongrass, and numerous broadleaf weeds. Add a surfactant at 0.25% v/v to the spray mix. There are no grazing restrictions for this herbicide. DO NOT cut for hay for 7 days after application. Other herbicides with the same active ingredient such as "Cadre" cannot be legally applied to perennial peanuts.
clethodim Select Max 0.97 lb/gal Intensity One 0.97 lb/gal TapOut 0.97 lb/gal Shadow 2 lb/gal Arrow 2 lb/gal	1	9-32 fl oz 6-16 fl oz 6-16 fl oz	0.07-0.24 0.09-0.25 0.09-0.25	24 H	*Clethodim* will provide excellent control of annual and perennial grasses, but will not control broadleaf weeds or sedges. Use the low rate on annual grasses, and the high rate on perennial grasses (see label). Select Max and Intensity One require the addition of a non-ionic surfactant at 0.25% v/v. For Shadow and Arrow use only a crop oil concentrate at 1% v/v. Use a non-ionic surfactant or crop oil concentrate with Tapout. Do not cut for hay or graze for 40 days after an application of *clethodim*.

NOTE: The Georgia Department of Agriculture has ruled that the above herbicides may be legally applied to perennial peanuts. This crop is classified as a forage. Additionally, the site of application is classified as a pasture or hay field. DO NOT apply *2,4-D amine* to peanuts being grown for seed or nuts. Perennial peanuts are not listed on the *2,4-D amine* label. Users are advised that in the event of poor weed control, adverse crop injury, or any other issues that might arise, the manufacturers of *2,4-D amine* may not warrant the application. Thus, while an application of these herbicides is legal, the end user assumes all responsibility with issues associated with an application. The University of Florida has conducted numerous experiments with these herbicides; however, there has been only limited testing of *2,4-D amine* at 0.5 lb ai/A on perennial peanut in Georgia. End users are advised to evaluate the use of *2,4-D amine* on a limited basis, and then make a decision if spraying an entire field is advisable.