

GRASS FORAGE WEED MANAGEMENT

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General Information

Effective weed control begins with pasture management. Weeds are greatly decreased in well-managed, vigorously growing pastures and hayfields. Aspects of good forage management practices include the following: 1) proper choice of the forage species and variety, 2) adequate fertility, 3) proper soil pH management, 4) proper grazing management, and 5) control of other pests (insects, diseases, and nematodes). Weeds fill in open spaces, so when a forage grass stand is weakened, weeds invade the space where the forage should be growing. Once a weed is established, mechanical or chemical methods are normally needed to control the weeds. If the basic management problem (i.e. fertility or grazing management) is not corrected, the pasture grass will not return in the areas where weeds are removed and weeds will continue to infest the area.

Mowing is the most commonly used practice to remove weeds from pastures. However, this is generally a temporary solution to a problem which will continue to occur. Most weeds when mowed will re-grow, especially perennial weeds such as brambles (blackberry and dewberry), dock, rose, horsetail, and persimmon, in addition to many low growing annual weeds. Mowing does improve the appearance of a pasture and if properly timed will prevent weeds from producing seed.

Weeds may be dispersed by wind, carried by water, distributed in planting seed, in feed or hay, carried by animals including man, or moved by machinery. Animals grazing in a weed infested pasture and then allowed to move directly to a clean pasture may move weed seed both internally and externally. One common problem is failure to control weeds in ditch banks, fence rows, and farm roads. These weeds produce seed and/or vegetative growth which re-infest pastures.

Effective control of perennial weeds is extremely dependent on application timing. The highest level of sustained control (longer than 1 year) of woody perennial weeds is often achieved when herbicides are applied in the fall (September or October), prior to leaf drop. Herbicide will be moved to the root when applied in the fall, resulting in control of the root system as well as the above ground growth. Annual weeds are most effectively controlled by applying herbicides in the vegetative stage, before flowering and seed production has occurred. The appropriate time of year varies according to weed species.

Established Dormant Bermudagrass

Herbicide	Rate/Acre Broadcast		Remarks/Precautions
	Formulation	Active Ingredient	
Gramoxone Inteon 2 SL (paraquat) and other trade names	1.0-2.0 pt.	0.25-0.5 lb.	Apply in 20 to 30 gallons of water in late winter or early spring (probably in February or March) before bermudagrass begins spring green-up. Add 1 pt. surfactant (non-ionic) per 100 gal. spray mix. Do not pasture or mow for hay until 40 days after treatment.
Glyphosate* acid equivalent (ae)			Apply in mid- to late-winter months to bermudagrass pastures to control winter weeds. Apply before new growth appears in the spring. Do not pasture or mow for hay for 60 days after application. A winter application prior to spring green-up and an application following the first cutting of hay may not be made on the field during the same year.
3 lb ae/gal.	16 oz.	0.38 lb.?? ae	
4 lb. ae/gal.	12 oz.		
4.5 lb. ae/gal.	11 oz.		

Newly Sprigged Bermudagrass

Herbicide	Rate/Acre Broadcast		Remarks/Precautions
	Formulation	Active Ingredient	
Direx 4L (Diuron)	0.8-2.4 qt.	0.8-2.4 lb.	Preemergence 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 inches deep to lessen chance of injury. Emerged bermudagrass 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.
Diuron 80WP	1.0-3.0 lb.		
2,4-D 4L	1.0 - 2.0 qt.	1.0 - 2.0 lb.	Apply to emerged broadleaf weeds 3-4 inches tall. Provides poor preemergence control of crabgrass. Refer to specific herbicide label for use information.

Established Forage Grasses

Herbicide	Rate/Acre Broadcast		Remarks/Precautions
	Formulation	Active Ingredient	
Banvel 4SL (Dicamba)	1.0-3.0 pt.	0.5-1.5 lb.	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 may severely injure or kill clovers and alfalfa.
Vanquish	1.0-3.0 pt.		
Cimarron 60DF (Metsulfuron)	0.1-1.0 oz.	0.004-0.04 lb.	Apply to established bermudagrass for the control of 'Pensacola' bahiagrass and certain broadleaf weeds. Apply 1 pt.-1 qt. nonionic surfactant per 100 gal. of spray mix. Not effective for the control of 'Common' and 'Argentine' bahiagrass. There is no grazing or haying restriction for Cimarron.
Cimarron Max 3SL (Metsulfuron + Dicamba)	0.25-1.0 oz. 1.0-3.0 pt.	0.009-0.037 lb. 0.5-1.0 lb.	Cimarron Max is a 2 part (co-pack) product used for annual and perennial broadleaf weed control in bermudagrass pastures. See Cimarron remarks above. Remove meat animals from treated areas 30 days prior to slaughter. There is no waiting period period between application and grazing for non-lactating animals.
Crossbow 3SL (2,4-D + Triclopyr)	1.0-6.0 qt.	0.5-3.0 lb. 0.25-1.5 lb.	

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Established Forage Grass Herbicides Cont.

Herbicide	Rate/Acre Broadcast		Remarks/Precautions
	Formulation	Active Ingredient	
Glyphosate* acid equivalent (ae)			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 one 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.
3 lb ae/gal.	16 oz.	0.38 lb.?? ae	
4 lb. ae/gal.	12 oz.		
4.5 lb. ae/gal.	11 oz.		
Grazon P+D 2.54SL (2,4-D + Picloram) <u>Restricted Use Herbicide.</u>	2.0-4.0 pt.	0.5-1.0 lb. 0.13-0.26 lb.	Use only in PERMANENT GRASS PASTURES AND HAYFIELDS. Grazon P+D may also be applied at 4.0 pts./acre or less to permanent pastures that will be seeded with cool-season grasses (ryegrass, tall fescue). Grazon P+D may be used at 1.5 pts./acre after establishment of newly-sprigged bermudagrass once stolons have reached 6 inches in length. This herbicide is not recommended for use in rotational systems that utilize broadleaf crops or in temporary summer or winter grazing grass systems unless temporary grass is seeded into a permanent pasture. Grazon P+D will injure or kill legumes such as clovers and alfalfa.
ForeFront R&P 3L (Aminopyralid + 2,4-D)	1.5-2.6 pt.	0.06-0.11 lb. 0.5-0.87 lb.	Controls annual and perennial broadleaf weeds as listed for Milestone. The addition of 2,4-D provides control of dogfennel and other weeds Milestone is weak on. Add a nonionic surfactant at 0.25% v/v. Do not plant a broadleaf crop until conducting a field bioassay. Forefront will kill legume crops such as clovers or alfalfa. Forefront is NOT a Restricted Use Herbicide.
Milestone 2 SL (Aminopyralid)	3.0-7.0 fl oz	0.047-0.109 lb	Controls annual and perennial broadleaf weeds, including invasive and noxious weeds. Add a nonionic surfactant at 0.25% v/v. Do not plant a broadleaf crop until conducting a field bioassay. No more than 7 fl oz/acre of Milestone can be applied each year. Milestone will kill legume crops such as clovers or alfalfa. Milestone is NOT a Restricted Use Herbicide.
PastureGard 2SL (Triclopyr + Fluroxypyr)	1.5-8.0 pt.	0.3-1.5 lb. 0.1-0.5 lb.	Controls a wide range of herbaceous and woody broadleaf plants. Use 1.5 to 3.0 pts./acre for herbaceous broadleaf weeds. Use 2.0 to 8.0 pts./acre for woody brush and trees. Do not graze lactating dairy animals on treated areas during the same growing season following application. Withdraw meat animals from treated forage at least 3 days before slaughter.

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Established Forage Grass Herbicides Cont.

Herbicide	Rate/Acre Broadcast		Remarks/Precautions
	Formulation	Active Ingredient	
Redeem R&P 3SL (Triclopyr + Clopyralid)	1.5-4.0 pt.	0.38-1.12 0.14-0.38	Apply for control of broadleaf weeds. Use 2.5 to 4.0 pts./acre 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.
Remedy 4SL (Triclopyr)	1.0-2.0 pt.	0.5-1.0 lb.	Apply to established grass pastures for control of broadleaf weeds and woody 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 two to three weeks.
Surmount 2.16SL (Picloram + Fluroxypyr) Restricted Use Herbicide.	1.5-6.0 pt.	0.22-0.9 lb. 0.18-0.72 lb.	Controls a wide range of herbaceous and woody broadleaf plants. Use 1.5 to 2.0 pts./acre for herbaceous broadleaf weeds. Use 3.0 to 6.0 pts./acre for woody brush and trees. Use only in PERMANENT GRASS PASTURES AND HAYFIELDS. See remarks for Grazon P+D.
Velpar 2SL (hexazinone)	2.75-4.5 pt.	0.67-1.12 lb.	Controls smutgrass in established bermudagrass and bahiagrass pastures and hayfields. Use low rate on coarse sandy soils, and high rate on fine-textured soils. Not recommended for use on tall fescue. Hexazinone will moderately to severely injure bermudagrass and may eliminate the first cutting of hay. Bahiagrass and bermudagrass will recover from temporary burn and yellowing within two to four weeks of application. Use only on bermudagrass and bahiagrass that has been established one year or more. DO NOT apply hexazinone near oak trees. DO NOT graze or feed treated forage or hay within 60 days after application.
Weedmaster 3.87SL (2,4-D + Dicamba)	2.0-4.0 pt.	0.72-1.44 lb. 0.25-0.5 lb.	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 and 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 4.0 pts./acre rate. Weedmaster may severely injure or kill clovers or alfalfa.

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Established Forage Grass Herbicides Cont.

Herbicide	Rate/Acre Broadcast		Remarks/Precautions
	Formulation	Active Ingredient	
2,4-D 4L	1.0-2.0 qt.	1.0-2.0 lb.	Apply to weeds 2-4 inches 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.

Grazing, Hay Cutting, and Slaughter Restrictions for Pasture Herbicides¹.

Hericide	Beef Cattle, Non-Lactating Dairy Cattle, and Other Livestock			Lactating Dairy Cattle		
	Grazing	Hay cutting	Slaughter	Grazing	Hay cutting	Slaughter
Banvel	0	0	30	7-40	37-70	30
Cimarron	0	0	0	0	0	0
Cimarron Max	0	0	30	7	37	30
Crossbow	0	7	3	14	365	3
Gramoxone Max	40	40	no info.	40	40	No info.
Glyphosate	14	14	no info.	14	14	No info.
Grazon P+D	0	30	3	7	30	3
ForeFront R&P	0	0	0	0	0	0
Milestone	0	0	0	0	0	0
Overdrive	0	0	0	0	0	0
PastureGard	0	14	3	next season	14	3
Redeem R&P	0	7	3	14	365	3
Remedy	0	7	3	14	365	3
Surmount	0	30	30	next season	30	3
Velpar	60	60	60	60	60	60
Weedmaster	0	37	30	7	30	3
2,4-D	0	30	3	7	30	3

¹ Days after application.

Weed Response¹ to Grass Forage Herbicides.

	Cimarron	Banvel	Weedmaster	Remedy	PastureGard	Crossbow	Redeem R&P	Velpar	2,4-D	Grazon P+D	Milestone	ForeFront R&P
broadleaf weeds												
arrowleaf sida	---	---	---	---	---	---	---	---	---	5	2	5
bitter sneezeweed	9	9	9	9	9	9	9	---	9	9	9	9
blackberry	9	6	6	7	7	6	6	7	7	6	3	7
blue vervain	---	---	9	---	---	---	---	---	9	9	7	7
greenbriar	---	7	7	8	8	8	3	7	3	---	---	7
Bulrush	---	8	---	8	3	8	3	---	8	---	---	8
Buttercup	9	3	9	9	7	9	9	8	9	9	8	9
Carolina falsedandelion	9	9	9	---	---	---	---	---	9	9	9	9
Carolina geranium	7	---	9	---	---	---	---	---	9	9	9	9
Cherokee rose	---	---	---	---	3	---	---	---	---	6	8	9
chickweed	9	9	9	9	7	9	9	9	7	9	---	9
cocklebur	---	---	---	---	---	---	---	---	7	9	9	9
cudweed	8	9	8	9	8	9	9	---	7	9	9	9
curly dock	6	6	6	6	---	---	---	2	6	6	6	7
dandelion	---	9	9	9	8	9	9	9	9	9	9	9
dodder	---	3	7	3	3	2	3	2	2	---	---	---
dogfennel	7	8	8	9	9	9	9	---	7	8	4	9
cutleaf eveningprimrose	8	9	9	9	8	9	---	9	9	---	9	9
goldenrod	4	8	8	8	8	8	9	---	7	8	4	7
henbit	9	9	9	9	8	9	9	9	7	8	---	9
honeysuckle	---	---	9	4	3	9	3	---	3	---	---	---
horsenettle	6	6	7	7	7	6	3	---	3	9	9	9
horseweed	7	7	9	8	8	8	8	---	7	9	9	9
kudzu	6	6	7	8	8	8	8	---	6	---	9	9
maypop passionflower	---	0	0	---	---	---	---	---	0	0	0	0
perilla mint	---	---	---	---	---	---	---	---	---	9	8	8
persimmon	---	---	7	7	7	8	3	7	3	---	---	---
pigweed	9	9	9	9	7	9	8	8	7	7	8	8
plantains	9	9	9	---	---	---	9	---	9	8	4	9
pokeberry	---	---	9	3	3	8	3	---	8	4	8	8
prickly lettuce	---	---	---	---	---	---	---	---	---	9	9	9
prickly pear	---	---	---	---	---	---	---	---	---	7	0	0
prickly sida	---	---	---	---	---	---	---	---	---	5	8	8
ragweed	8	8	9	9	9	9	9	7	9	9	9	9
shepardspurse	---	---	9	9	8	9	8	9	9	---	---	9
sicklepod	8	8	9	9	8	9	8	---	8	---	---	8
thistles	7	7	9	9	8	9	9	9	9	9	9	9
tropical soda apple	6	2	7	8	8	7	2	7	6	9	9	9
trumpetcreeper	---	0	0	---	---	---	---	---	0	0	0	0
Virginia pepperweed	---	---	9	5	8	---	---	9	8	---	---	7
wild carrot	---	---	---	---	---	---	---	---	---	8	6	6
wild garlic	8	8	9	---	3	---	---	---	8	5	5	7
wild radish	8	8	9	9	8	9	7	9	8	---	---	7
Grasses												
bahiagrass	8	0	0	0	0	0	0	0	0	0	0	0
broomsedge	2	0	0	0	0	0	0	0	0	0	0	0
crabgrass	2	0	0	0	0	0	0	0	0	0	0	0
dallisgrass	0	0	0	0	0	0	0	0	0	0	0	0
ryegrass	2	0	0	0	0	0	0	0	0	0	0	0
sandbur	0	0	0	0	0	0	0	0	0	0	0	0
nutsedge	1	0	0	0	0	0	0	0	0	0	0	0

¹KEY TO RESPONSE RATINGS: 0=No control; 10=100% control; ---=Data not available. Ratings are based on application of labeled rates of each herbicide, applied at the optimum timing for each weed.