

See back page for list of plants discussed in this circular.

Noxious woody and weedy plants inhabit much of New Mexico's rangelands. Dense stands of brush and weeds use vast quantities of water, reduce forage production and contribute to erosion. If rangelands are to reach their productive potential, noxious plants need to be managed effectively. Herbicides can be effective, economical and efficient methods for controlling brush and weeds and improving and maintaining rangelands.

This circular lists current suggestions for herbicides to control woody and herbaceous weeds on rangeland. Some herbicides provide a high degree of control of certain species and a reduced degree of control of other species. However, seldom is a species eradicated. When developing a woody and herbaceous weed management program, consider all possible rangeland uses. Many woody plants and forbs are valuable sources of food and cover for wildlife and can also be important to livestock operations. A woody and herbaceous weed management program should use control methods that provide optimum benefits to both livestock and wildlife.

Herbicides are effective and safe when they are used properly (Appendix A). Misuse can result in poor woody and herbaceous weed control, increased expense, and possible hazards from herbicidal drift or residues that damage or kill desirable plants. Use the following guidelines for proper herbicide use:

- Correctly identify the plant species and evaluate the need for control.
- Consider the expected benefits and costs of herbicide and alternative control practices, as well as alternative uses of funds.
- Select and purchase the appropriate herbicide for the plant species.
- Provide and require proper safety equipment.
- Calibrate spray equipment to correctly apply the desired rate.

- Mix herbicides in a well-ventilated area, preferably outside.
- Spray under conditions that minimize drift.
- Read and follow instructions on the label.
- Keep a record of the herbicide used, time of application, weather conditions, rate of herbicide applied, date, location and applicator.

For successful weed control, the correct quantity of herbicide mixture must be applied to a specific area. To calibrate spray equipment, see NMSU Cooperative Extension Service Guide A-613, *Sprayer Calibration* (http://aces.nmsu.edu/pubs/_a/A-613.pdf), on calibrating pesticide applicators. For information about procedures for obtaining a pesticide applicator's license and other information about applying herbicides properly, contact your county Extension office.

The following suggestions for using herbicides are based upon their effectiveness under New Mexico conditions. Broadcast and individual plant treatments are presented in Table 1. Individual plant treatments are best suited for controlling thin stands of brush (usually less than 150 plants/acre) and for selective control. Broadcast treatments are useful for dense stands of target weed(s).

Suggested herbicides must be registered and labeled for use by the Environmental Protection Agency. Some of the suggested herbicides are restricted-use pesticides and require an applicator's license for purchase and use. **Because the status of herbicide label clearance is subject to change, be certain to use a current label for the herbicide's intended use.**

The user is always responsible for the effects of herbicide residue on livestock and crops, as well as for problems that arise from drift or other herbicide movement from the user's property to the property of others.

The label is a legal document and violation of it is a federal offense.

Always read and follow carefully the instructions on the container label. Especially note any grazing restrictions that apply to the herbicide.

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Table 1. Herbicides for controlling undesirable brush and weeds on rangelands.

Plant controlled	Trade name and product	Herbicide (common name and active ingredient)	Herbicide quantity (active ingredient or acid equivalent in parenthesis)		Spray volume (broadcast per acre or individual plant)	Time of application	Remarks	
			Broadcast rate per acre	Individual plant/spot treatment				
African rue	Arsenal	imazapyr	3 pt (3/4 lb)	1 gal per 100 gal. water (2 lbs per 100 gal water)	10–25 gal for ground broadcast	Spray only actively growing (nonstressed) plants	Caution: Arsenal or Velpar L will damage or kill other sprayed or nearby vegetation	
	Velpar L	hexazinone		2 ml/plant	Individual plant treatment only			Any time of year
	Pronone Power Pellets	hexazinone		1 pellet/plant				
Algerita	Velpar L	hexazinone		3 ml/3 ft canopy height	Individual plant treatment only	Any time of year. Optimum is prior to rainy season	Do not apply to snow-covered or frozen ground	
	Pronone Power Pellets	hexazinone		1 pellets/2 ft canopy height				
	Spike 20P	tebuthiuron		1/16 oz pellets/3 ft canopy height				
Bindweed, field	Banvel, Clarity	dicamba	1 pt to 1 qt (1/2 to 1 lb)		10–25 gal for ground broadcast application. Use surfactant as per label.	Summer fallow prior to planting and when weeds are actively growing or in late summer or fall prior to post-bloom or killing frost. Follow-up applications should be made in spring to control seedlings. Spring to fall.	For suppression, refer to label for crop rotation restrictions	
	Overdrive	dicamba: diflufenzopyr	4 to 8 oz (5:2 mixture 1/4 to 1/2 lb)					
	Plateau	imazapic	4 to 8 oz (1/16 to 1/8 lb)					
	Weedmaster	dicamba:2,4-D	1 pt to 1 qt (1:3 mixture) (1/2 to 1 lb)					
	Tordon 22K**	picloram	1 to 2 qt (1/2 to 1 lb)					
	Paramount	quinclorac	5 to 8 oz (1/4 to 3/8 lb)		10–25 gal for ground broadcast. Add 1–2 pints MSO.			
	Roundup*	glyphosate	4 to 5 qt (4 to 5 lb)		10–25 gal for ground broadcast application. Use surfactant as per label	Full bloom to early seed stage		
	Tank mix Roundup + Banvel, Clarity	glyphosate + dicamba	1 qt + 1/2 pt (1 lb + 1/2 lb)			Mid- to late-bloom		
	Landmaster BW	glyphosate:2,4-D	3 1/5 pt (1:1 lb)			Fallow or post-harvest when bindweed has 10 in. runners		
2,4-D*	2,4-D	2 to 3 qt (2 to 3 lb)		Bud stage or summer; follow in early August				
Bitter sneezeweed, broomweed (annual or common), buckwheat, camphorweed, cocklebur, horehound, horsemint, knapweed, lakeweed, milkvetch, mustard, pepperweed, pinque, prairie coneflower, ragweed (common or western), sunflower, thistles, nettles, and western bitterweed	2, 4-D*	2, 4-D	1 pt to 1 qt (1/2 to 1 lb)		2–4 gal water for aerial spray; 10–25 gal for ground broadcast application. Add surfactant as needed.	Spring weeds 4–6 in. high, before blooming, good growing conditions	Use 2,4-D amine or low volatile ester. Do not spray near susceptible crops.	
	Weedmaster	dicamba:2,4-D	1 pt to 1 qt (1:3) 1/2 to 1 lb					
	Tank mix Banvel + 2, 4-D*	dicamba + 2, 4-D	1/4 to 1/2 pt (1/8 to 1/4 lb) + 3/4 to 1 1/2 pt (3/8 to 3/4 lb)					
	Grazon P+D	picloram:2,4-D	1 to 3 pt (1:2 mixture) (3/10 to 9/10 lb)					
	Tank mix Tordon 22K** + 2,4D	picloram + 2,4-D	1/4 to 3/4 pt (1/16 to 3/16 lb) + 1/2 to 1 1/2 pt (1/4 to 3/4 lb.)					

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(Continued) Bitter sneezeweed, broomweed (annual or common), buckwheat, camphorweed, cocklebur, horehound, horsemint, knapweed, lakeweed, milkvetch, mustard, pepperweed, pinque, prairie coneflower, ragweed (common or western), sunflower, thistles, nettles and western bitterweed	Chaparral	aminopyralid + metsulfuron	2 1/2 to 3 1/3 oz (1/12 to 1/8 lb)		2–4 gal water for aerial spray; 10–25 gal for ground broadcast application. Add surfactant as needed.	Spring weeds 4–6 in. high, before blooming, good growing conditions		
	Escort	metsulfuron	5/8 to 4/5 oz (3/8 to 1/2 oz)					
	Cimarron Plus	metsulfuron + chlorsulfuron	8/10 to 1 oz (6/10 to 8/10 oz)					
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate I to II (1/4 oz + 1 pt to 1/2 oz + 2 pt)					
	Overdrive	dicamba: diflufenzopyr	4 to 8 oz (5:2 mixture 1/4 to 1/2 lb)					
	Milestone	aminopyralid	3 to 7 oz (1/20 to 1/10 lb)					Add 1/2% nonionic surfactant
	GrazonNext	aminopyralid: 2,4-D	1 1/2 to 2 pt (1/2 to 3/4 lb)					
Black henbane	Cimarron Plus	metsulfuron + chlorsulfuron	6/10 oz (1/2 oz)		10–25 gal for ground broadcast application. Use surfactants as per label.	Rosette to bloom	Seedlings should be controlled the following year	
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate II (1/2 oz + 2 pt)					
Bursage, skeletonleaf	2,4-D*	2,4-D	1 1/2 to 2 qt (1 1/2 to 2 lb)		10–25 gal for ground broadcast application	Without cultivation, spring and fall	Treat after tillage when regrowth is 4–6 in.	
	Tordon 22K**	picloram	2 qt (1 lb)			Fully leaved and actively growing		
	Banvel, Clarity	dicamba	1 to 2 qt (1 to 2 lb)			Late summer and fall		
Camelthorn	Escort XP	metsulfuron		3/8 oz (1/4 oz per 100 gal water)	Individual plant treatment. Mix in 100 gal water, add 8 oz silicone surfactant	Actively growing	Retreatment may be necessary	
	Arsenal	imazapyr		3/4 to 1 1/2 qt (3/8 to 3/4 lb per 100 gal water)				
	Milestone	aminopyralid	5 to 7 oz (1/12 to 1/10 lb)					In vegetative state, prior to bloom
Catclaw mimosa, whitethorn acacia	Spike 20P	tebuthiuron	3 3/4 to 5 lb pellets (3/4 to 1 lb)		Aerial broadcast	Any time during year. Optimum is prior to rainy season.	Use only on coarse-textured soils.	
	Tank mix Tordon 22K** + Remedy	picloram + triclopyr	2 pt + 1 pt (1/2 lb* + 1/2 lb)		2–4 gal oil-in-water emulsion as aerial spray (1 pt to 1 qt diesel oil in water to make 2–4 gal). 10–25 gal oil-in-water emulsion for ground broadcast (1/2–1 gal diesel oil-in-water to make 10–25 gal).	When leaves are fully expanded. Good growing conditions.	Do not spray near susceptible crops	
	Reclaim	clopyralid	2/3 pt to 2/3 qt (1/4 to 1/2 lb)					
	Tank mix Reclaim + Remedy	clopyralid + triclopyr	1/3 to 2/3 pt + 1/4 to 1/2 pt (1/8 to 1/4 lb + 1/8 to 1/4 lb)					
	Spike 20P	tebuthiuron		1/4 to 1/2 oz per 3 ft of canopy diameter or height				Individual plant treatment

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			Broadcast rate per acre	Individual plant/spot treatment			
Catclaw acacia	Spike 20P	tebuthiuron	5 to 7 1/2 lb of pellets (1 to 1 1/2 lb)		Aerial broadcast	Any time during year. Optimum is prior to rainy season.	Use only on coarse-textured soils
	Tank mix Tordon 22K** + Remedy	picloram + triclopyr	2 pt + 1 pt (1/2 lb + 1/2 lb)		2-4 gal oil-in-water emulsion as aerial spray (1/2-1 gal diesel oil-in-water to make 2-4 gal). 10-25 oil-in-water emulsion for ground broadcast (1/2 to 1 gal diesel oil-in-water to make 10-25 gal).	When leaves are fully expanded. Good growing conditions	Do not spray near susceptible crops
	Spike 20P	tebuthiuron		1/4 to 1/2 oz per 3 ft of canopy diameter or height	Individual plant treatment	Any time during year. Optimum is prior to rainy season.	Do not apply to frozen or snow-covered ground. Distribute uniformly under canopy. Use only on coarse-textured soils
	Velpar L	hexazinone		4 ml per 3 ft of canopy diameter or height			
Cattail, common	2,4-D*	2,4-D		6 qt per 100 gal water (6 lb per 100 gal water)	Spray to wet with handheld equipment	Before cattail heads appear	Reapplications may be necessary. Use surfactant as per label.
	Rodeo	glyphosate		5 3/4 to 7 1/2 pt (2 7/8 to 3 3/4 lb)		Early to full bloom	
	Habitat	imazapyr	2 qt (1 lb)		Broadcast	When plants are actively growing	Use surfactants as per label
	Habitat	imazapyr		1 gal (2 lb)	Mix in 100 gal of water, spray to wet. Add surfactant as per label		
Cholla, prickly pear	Tordon 22K**	picloram		4 to 6 ml per 3 ft of plant height (cholla) or plant width (prickly pear)	Individual plant treatment, spot applied	Any time during year. Optimum is prior to rainy season.	Apply at junction of stem and ground (cholla) or within plant area (prickly pear). Do not treat more than 25% of watershed. Herbicide is very slow acting. H91 May take 2-3 years to show effect.
	Tordon 22K**	picloram	1 qt (1/2 lb)		2-4 gal water solution as aerial spray. 10-25 gal water solution as ground broadcast. Individual plant treatment. Mix 2 gal herbicide in 100 gal water. Add surfactant as per label.	Any time air temperature is above 60°F and has not been 32°F or below during the past 24 hours. For best results, spray when cacti are in bloom.	Do not spray near susceptible crops. Spray to wet.
	Vista	fluroxypyr		1 to 2% (1 to 2 gal/100 gal water)			Best during growing season
	Surmount	picloram: fluroxypyr (1:1)		1 to 2% (1 to 2 gal/100 gal water)			
	(cholla only) Velpar L	hexazinone		4 to 6 ml per 3 ft of plant height	Individual plant treatment only	Any time during year. Optimum is prior to rainy season.	Apply diluted Velpar L to soil surface at junction of stem and ground
	Pronone Power Pellets (Cholla only)	hexazinone		1 pellet per 2 ft. of plant height			

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Crazyweed (silky or Lambert's); locoweed, whitepoint or wooly	Tordon 22K**	picloram + 2,4-D	1 qt (1/2 lb)		2-4 gal water for aerial spray. 10-25 gal for ground broadcast application. Add surfactant as per label.	When plants are actively growing and before seeds mature	To prevent livestock poisoning, avoid grazing until plants are totally dry
	Tank mix Banvel Clarity + 2,4-D*	dicamba + 2,4-D	1 qt + 1 qt (1 lb + 1 lb)				
	Weedmaster	dicamba:2,4-D	1 to 2 qt (1:3 mixture) (1 to 2 lb)				
	Escort XP	metsulfuron	1/2 oz (3/10 oz)				
	Cimarron Plus	metsulfuron + chlorsulfuron	6/10 oz (1/2 oz)				
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate II (1/2 oz + 2 pt)				
	Grazon P+D	picloram:2,4-D	1 to 2 qt (1:4 mixture) (5/8 to 1 1/4 lb)				
	Tank mix Tordon 22K** + 2,4-D	picloram + 2,4-D	1 to 2 qt + 1 1/2 to 3 pt (1/4 to 1/2 lb + 3/4 to 1 1/2 lb 2,4-D)				
Creosotebush	Spike 20P	tebuthiuron	3 3/4 to 5 lb of pellets (3/4 to 1 lb)		Aerial broadcast	Any time during year. Optimum is prior to rainy season.	Use 1-lb rate when soils are loam, silt, or sandy clay loam
	Tordon 22K**	picloram		2 to 4 ml per 3 ft of canopy diameter	Individual plant treatment	Any time during year. Optimum is prior to rainy season.	Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground. Do not treat more than 25% of watershed
	Velpar L	hexazinone		2 to 4 ml per 3 ft of canopy diameter	Individual plant treatment	Any time during year. Optimum is prior to rainy season.	Apply undiluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not use on clay soil. Do not apply to frozen or snow-covered ground.
	Pronone Power Pellets	hexazinone		1 pellet per 1 ft. of canopy diameter			
	Spike 20P	tebuthiuron		1/4 to 1/2 oz per 3 ft of canopy diameter			
Dalmatian and yellow toadflax	Telar XP	chlorsulfuron	2 oz (1 1/2 oz)		10-25 gal for ground broadcast. Add 0.25% v/v nonionic surfactant.	Actively growing in spring or fall	See label
	Tordon 22K**	picloram	1 to 2 qt (1/2 to 1 lb)			Through full bloom or to fall regrowth	Especially effective after first killing frost
Downy brome, cheatgrass	Aatrex	atrazine	1 to 2 pt (1/2 to 1 lb)		10-25 gal for ground broadcast	When desirable vegetation is dormant	
	Gramoxone	paraquat	26 oz (1/2 lb)		Add 0.25% nonionic surfactant		2 years successive treatment necessary
	Oust	sulfometuron	1 oz (3/4 oz)			Late fall or winter	See label
	Roundup*	glyphosate	1/2 to 1 pt (1/4 to 1/2 lb)			After emergence and before seedset	
	Plateau, Journey	imazapic	9 to 13 oz (1/7 to 1/5 lb)		Add 1 qt/A MSO		Use low rate for cheatgrass

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Dyer's woad	2,4-D*	2,4-D	1 1/2 to 2 qt (1 1/2 to 2 lb)		10-25 gal for ground broadcast	Rosette stage	Repeat treatments may be necessary
	Escort XP	metsulfuron	3/4 oz (2/5 oz)		Add 0.25% v/v nonionic surfactant	Actively growing plants	
	Telar XP	chlorsulfuron	1 oz (3/4 oz)				
	Cimarron Plus	metsulfuron + chlorsulfuron	9/10 oz (3/4 oz)				
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate II (1/2 oz to 2 pt)				
Goatgrass, jointed	Oust	sulfometuron	1 3/10 oz (1 oz)		10-25 gal for ground broadcast application or 2-4 gal for aerial broadcast	Late fall or winter	See label
	Plateau	imazapic	4 to 6 oz (1/16 to 3/32 lb)			Fall	
	Roundup	glyphosate	2 1/2 to 3 pt (1 1/4 to 1 1/2 lb)		Spot treatments	When fully tilled	
Gumweed, curlycup	Escort XP	metsulfuron	1 oz (3/5 oz)		10-25 gal for ground broadcast or 2-4 gal for aerial broadcast. Add 0.25% v/v nonionic surfactant.	Early spring	See label
	Cimarron Plus	metsulfuron + chlorsulfuron	1 1/4 oz (1 oz)				
	2,4-D*	2,4-D	2 qt (2 lb)				
	Tordon 22K**	picloram	1 pt (1/4 lb)				
	Grazon P+D	picloram:2,4-D	2 qt (1:2 mixture) (1 1/5 oz)				
	GrazonNext	aminopyralid: 2,4-D	1 1/2 to 2 pt (1/2 to 3/4 lb)				
	Tank mix Tordon 22K**+2,4-D	picloram + 2,4-D	1 pt + 1 qt (1/4 lb + 1 lb)				
Halogeton	Escort XP	metsulfuron	1 oz (6/10 oz)		10-25 gal for ground broadcast. Add 0.25% v/v nonionic surfactant.	Early spring with good growth	
	Telar XP	chlorsulfuron	1/2 to 1 oz (3/8 to 3/4)				
	Cimarron Plus	metsulfuron + chlorsulfuron	1 1/4 oz (1 oz)				
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate II (1/2 oz + 2 pt)				
	2,4-D*	2,4-D	2 qt (2 lb)				
Hoarycress, whitetop and related species	2,4-D*	2,4-D	2 qt (2 lb)		10-25 gal for ground broadcast. Add 0.25% v/v nonionic surfactant.	Before bud stage	Repeat treatment may be necessary
	Chaparral	aminopyralid + metsulfuron	2 1/2 to 3 1/3 oz (1/12 to 1/8 lb)			Spring or fall	
	Telar XP	chlorsulfuron	1 oz (3/4 oz)			Bud to early bloom	See label
	Escort XP	metsulfuron	1 oz 3/5 oz				
	Cimarron Plus	metsulfuron + chlorsulfuron	1 1/4 oz (1 oz)				

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Hoarycress, whitetop and related species (Continued)	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate III (1 oz + 4 pt)				
	Plateau	imazapic	8 to 12 oz (1/8 to 3/16 lb)				
Horsetail, smooth, scouring rush	Telar XP	chlorsulfuron	1 to 2 oz (3/4 to 1 1/2 oz)		10–25 gal for ground broadcast. Add nonionic surfactant at 1 pt to 1 qt/100 gal spray solution.	Early spring	See label
	Escort XP	metsulfuron	1 to 2 oz (3/5 to 1 1/5 oz)				
	Oust	sulfometuron	1 1/2 oz (1 1/8 oz)				
	MCPA (4EC) Ester	2, 4-D	1 qt (1 lb)			Before cone heads appear	Important to use the isocylester formulation
Houndstongue	2,4-D*	2,4-D	2 qt (2 lb)		10–25 gal for ground broadcast. Add 0.25% v/v nonionic surfactant.	Early before bloom	
	Escort XP	metsulfuron	1 oz (3/5 oz)			Before bolting	See label
	Plateau	imazapic	13 oz (1/5 lb)		Add MSO at 1 1/2–2 pt/acre	Before bloom	
	Cimarron Plus	metsulfuron + chlorsulfuron	1 1/4 oz (1 oz)				
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate III (1 oz + 4 pt)				
Iris, Rocky Mountain	2,4-D*	2,4-D	2 qt (2 lb)		10–25 gal for ground broadcast	Early bloom stage	Wet thoroughly
Juniper (cedar)	Spike 20P	tebuthiuron	5 to 10 lb of pellets (1 to 2 lb)		Ground or aerial broadcast	Any time during year. Optimum is prior to rainy season.	Use only on coarse-textured soils.
	Velpar L	hexazinone		4 to 6 ml per 3 ft of canopy height	Individual plant treatment	Any time during year. Optimum is prior to rainy season.	Apply evenly around trees at dripline. Do not treat more than 25% of watershed. Do not apply to froze or snow-covered ground+H416d. Treat trees under 9 ft.
	Tordon 22K**	picloram		4 to 6 ml per 3 ft of canopy height			
Knapweed, diffuse and spotted	Tordon 22K**	picloram	1 1/2 pt (3/8 lb)		10–25 gal for ground broadcast. 3–4 gal for aerial broadcast. Add 0.25% v/v nonionic surfactant.	Rosette to mid-bolting	See label
	Grazon P+D	picloram:2,4-D	2 to 3 qt (1:2 mixture) (1 1/4 to 1 7/8 lb)				
	Tank mix Tordon 22K** + 2,4-D	picloram + 2,4-D	2 to 3 pt + 3 to 4 1/2 pt (1/2 to 3/4 lb + 3 to 4 1/2 lb)				
	2,4-D*	2,4-D	2 qt (2 lb)			Early stage of flower stem elongation	
	Chaparral	aminopyralid + metsulfuron	2 1/2 to 3 1/3 oz (1/12 to 1/8 lb)			Spring of fall	
	Tank mix Banvel, Clarity + 2,4-D*	dicamba + 2,4-D	1 pt + 1 qt (1/2 lb + 1 lb 2,4-D)			Rosette stage before bolting	
	Curtail	clopyralid:2,4-D	2 to 3 qt (1:5 mixture) (1 1/15 to 1 4/5 lb)				
	Reclaim	clopyralid	1/3 to 1 1/3 pt (1/8 to 1/2 lb)				
	Milestone	aminopyralid	5 to 7 oz (1/12 to 1/10 lb)				

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Knapweed, Russian	Roundup*	glyphosate	4 4/5 qt (4 4/5 lb)		10–25 gal for ground broadcast	Late bud to early flower	Retreatment may be necessary
	Tordon 22K**	picloram	1 to 2 qt (1/2 to 1 lb)			Early flower to frost	
	Curtail	clopyralid:2,4-D	1 to 2 qt (1:5 mixture) (3/5 to 1 1/5 lb)			Full bloom to frost	See label
	Reclaim	clopyralid	2/3 to 1 1/3 pt (1/4 to 1/2 lb)			Full bloom to frost	
	Plateau	imazapic	12 oz (3/16 lb)			Fall and winter	Add 1% v/v MSO
	Milestone	aminopyralid	5 to 7 oz (1/12 to 1/10 lb)			Prebloom to bloom and fall rosette	
	Telar XP	chlorsulfuron	1 to 3 oz (3/4 to 2 1/4 oz)			Spring or fall	
	Chaparral	aminopyralid + metsulfuron	2 1/2 to 3 1/3 oz (1/12 to 1/8 lb)				
Larkspur, geyer	Escort XP	metsulfuron	1 1/2 oz (9/10 oz)		10–25 gal for ground broadcast. Add 0.25% v/v nonionic surfactant.	Rosette	
	Tordon 22K**	picloram	1 1/2 to 2 qt (3/8 to 1/2 lb)			Rapidly growing	
Larkspur, tall or duncecap	Escort XP	metsulfuron	1 1/2 oz (9/10 oz)		10–25 for ground broadcast. Add 0.25% v/v nonionic surfactant.	6 to 8 leaf stage; less than 8 in. tall	
	Tordon 22K**	picloram	2 to 3 qt (1 to 1 1/2 lb)			Bud stage	
Leafy spurge	Banvel, Clarity	dicamba	2 qt (2 lb)		10–25 for ground broadcast. Add 0.25% v/v nonionic surfactant.	Spring to early summer	Retreatment is necessary
	Tordon 22K**	picloram	1 to 3 pt (1/2 to 1 1/2 lb)				
	2,4-D*	2,4-D	1 qt (1 lb)				
	Plateau	imazapic	8 to 12 oz (1/8 to 3/16 lb)		Add 1% v/v MSO	Late summer through fall. Spring to early summer	
	Tank Mix Overdrive + Tordon 22K	dicamba: diflufenzopyr + picloram	4 to 6 oz + 8-16 oz (1/4 to 3/8 + 1/8 to 1/4 lb)				
Lotebush	Spike 20P	tebuthiuron		1/4 to 1/2 oz per 3 ft of canopy diameter or height	Individual plant treatment	Any time during year. Optimum is prior to rainy season.	Distribute pellets uniformly under canopy.
	Velpar L	hexazinone		2 to 4 ml per 3 ft of plant diameter or height, or 2 to 4 ml per inch of stem diameter			Apply diluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not use on clay soils. Do not apply to frozen or snow-covered ground.
	Pronone Power Pellets	hexazinone		1 pellet per 2 ft plant diameter or height			

Table 1. Herbicides for controlling undesirable brush and weeds on rangelands.

Plant controlled	Trade name and product	Herbicide (common name and active ingredient)	Herbicide quantity (active ingredient or acid equivalent in parenthesis)		Spray volume (broadcast per acre or individual plant)	Time of application	Remarks
			Broadcast rate per acre	Individual plant/spot treatment			
Mesquite, grassland	Remedy (suppression)	triclopyr	1/2 to 1 pt (1/4 to 1/2 lb)		2–4 gal oil-in-water emulsion as aerial spray (1 pt to 1 qt diesel fuel oil and water to make 2–4 gal/acre). 10–25 gal oil-in-water emulsion (1/2 to 1 gal diesel fuel oil and water to make 20–25 gal/acre) as ground broadcast. Add surfactant as needed.	Spring to early summer, 40–90 days after bud break	Apply only when soil moisture conditions are good and plants have full leaf cover of even-aged, undamaged leaves. Do not apply when mesquite plants are stressed from drought, frost, hail, wind, or insects. Do not apply near susceptible crops.
	Reclaim	clopyralid	2/3 pt to 2/3 qt (1/4 to 1/2 lb)				
	Tank mix Reclaim + Remedy	clopyralid + triclopyr	1/3 to 1 pt + 1/4 to 3/4 pt (1/8 to 3/8 lb + 1/8 to 3/8 lb)				
	Sendero	clopyralid + aminopyralid	28 oz				
	Sendero + Remedy	clopyralid + aminopyralid + triclopyr	28 oz + 8 to 16 oz				
	Sendero + Surmount	clopyralid + aminopyralid + picloram + fluroxypyr	28 oz + 1 to 2 qt				
	Remedy Ultra	triclopyr		3 pt (1 1/2 lb per 100 gal)	Individual plant treatment	Spring to early summer, 40–90 days after bud break	Spray must cover all parts
	Velpar L	hexazinone		4 to 6 ml per 3 ft of plant diameter or height, or 2 to 4 ml per inch of stem diameter		Any time of year. Optimum is prior to rainy season.	Apply undiluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not use on frozen or snow-covered ground.
	Pronone Power Pellets	hexazinone		1 pellet per 2 ft of plant diameter or height			
Mesquite, mixed brush (catclaw, tarbush, whitehorn, creosotebush, broom snakeweed, wolfberry)	Spike 20P	tebuthiuron	3 3/4 to 7 1/2 lb of pellets (3/4 to 1 1/2 lb)		Aerial broadcast	Any time of year. Optimum is prior to rainy season.	Low rate may be used on sand or loamy sand soils
	Tank mix Banvel + Remedy	dicamba + triclopyr	1/2 to 1 pt + 1/2 to 1 pt (1/4 to 1/2 lb + 1/4 to 1/2 lb)		2–4 gal oil-in-water emulsion as aerial spray (1 pt to 1 qt of diesel fuel oil and water to make 2–4 gal/acre). 10–25 gal oil-in-water emulsion as ground broadcast (1/2–1 gal diesel fuel oil to make 20–25 gal/acre). Add surfactant as needed.	Spring to early summer, 40–90 days after bud break	For best results, monthly precipitation should exceed the annual average from January to the spray season. Foliar sprays should be applied only where there are few associate weeds, such as broom snakeweed, shin-nery oak, catclaw, etc. These nontarget species may dominate a stand after mesquite control and provide undesirable results.
Milkweed, showy and related species	Tordon 22K**	picloram	2 to 3 qt (1 to 1 1/2 lb)		10–25 gal for ground broadcast. 0.25% v/v nonionic surfactant.	Bud to early bloom	See label
	Banvel, Clarity	dicamba	2 qt (2 lb)			Emergence to bloom	
Oxeye daisy	Remedy	triclopyr	1 1/3 pt (2/3 lb)		10–25 gal for ground broadcast	Actively growing	Retreatment may be necessary
	Tordon 22K**	picloram	1 to 2 pt (1/4 to 1/2 lb)				
Perennial pepperweed	Escort XP	metasulfuron	1 oz (3/5 oz)		10–25 gal for ground broadcast. Add 0.25% v/v nonionic surfactant.	Late bud to early flower	See label
	Cimarron Plus	metasulfuron + chlorsulfuron	1 1/4 oz (1 oz)				
	Telar XP	chlorsulfuron	1 oz (7/10 oz)				
	Roundup	glyphosate	3 to 4 qt (3 to 4 lb)		25–40 gal for ground broadcast	Mow plants when bolting bud stage, spray resprouting plants	Wait until all resprouts emerge before applications
	2,4-D*	2,4-D*	2 qt (2 lb)			Late bud to early flower	Retreatments may be necessary

Table 1. Herbicides for controlling undesirable brush and weeds on rangelands.

Plant controlled	Trade name and product	Herbicide (common name and active ingredient)	Herbicide quantity (active ingredient or acid equivalent in parenthesis)		Spray volume (broadcast per acre or individual plant)	Time of application	Remarks		
			Broadcast rate per acre	Individual plant/spot treatment					
Poison ivy, poison oak	Roundup*	glyphosate	4 to 6 qt (4 to 6 lb)		10–25 gal for ground broadcast	Actively growing.	Add 0.25% v/v nonionic surfactant		
	Roundup	glyphosate		2 gal per 100 gal water (8 lb/100 gal water)	2% v/v individual plant treatment				
	Garlon 3A Ultra	triclopyr	1 to 3 gal (3 to 9 lb)		10–25 gal for ground broadcast				
	Garlon 4 Ultra, Remedy	triclopyr	1 to 2 gal (4 to 8 lb)						
	Garlon 3A Ultra	triclopyr		4 qt/100 gal water (3 lb/100 gal water)	Individual plant treatment				
	Garlon 4 Ultra, Remedy			3 qt/100 gal water (3 lb/100 gal water)					
Poverty sumpweed	Banvel, Clarity	dicamba	1 to 2 qt (1 to 2 lb)		10–25 gal for ground broadcast. Add 0.25% v/v nonionic surfactant.	Actively growing			
	Tordon 22K**	picloram	2 pt (1/2 lb)						
	2,4-D*	2,4-D	4 to 6 qt (4 to 6 lb)						
Rabbitbush	Velpar L	hexazinone		4 to 6 ml per 3 ft of plant diameter	Individual plant treatment	Any time of year. Optimum is prior to rainy season.	Apply undiluted Velpar L to soil surface within 3 ft of stem base. Do not use on clay soils. Do not apply to frozen or snow-covered ground.		
	Pronone Power Pellets	hexazinone		1 pellet per 2 ft. plant diameter					
Rayless goldenrod	Spike 20P	tebuthiuron	5 lb of pellets (1 lb)		Aerial broadcast	Any time of year. Optimum is prior to rainy season.	Do not apply to frozen or snow-covered ground		
	Spike 20P	tebuthiuron		1/4 to 1/2 oz per 3 ft of canopy diameter	Individual plant treatment			Distribute pellets uniformly under canopy. Do not apply to frozen or snow-covered ground.	
	Tordon 22K**	picloram	1 qt (1/2 lb)		10–25 gal for ground broadcast.			Fall, after blooming and before frost	Do not spray near susceptible crops
	Escort XP	metsulfuron	4/5 oz 1/2 oz		2–4 gal for aerial broadcast				
	Cimarron Plus	metsulfuron + chlorsulfuron	1 oz (8/10 oz)						
Russian olive (see also saltcedar)	See saltcedar			See saltcedar	See saltcedar	See saltcedar	See saltcedar		
	Roundup	glyphosate		5 to 7 gal per 100 gal of water	Individual plant treatment	June–July			
Sagebrush, big	Spike 20P	tebuthiuron	2 1/2 lb of pellets (1/2 lb)		Aerial broadcast	Any time of year. Optimum is prior to rainy season.	Select productive sites for treatment		
Sagebrush, fringed	2,4-D*	2,4-D	2 qt (2 lb)		10–25 gal for ground broadcast. 2–4 gal for aerial broadcast.	Actively growing	Repeat for 2 more years as necessary		
	Spike 20P	tebuthiuron	2 1/2 to 3 3/4 lb pellets (1/2 to 3/4 lb)		Aerial or ground broadcast	Any time of year. Optimum is prior to rainy season.			

Table 1. Herbicides for controlling undesirable brush and weeds on rangelands.

Plant controlled	Trade name and product	Herbicide (common name and active ingredient)	Herbicide quantity (active ingredient or acid equivalent in parenthesis)		Spray volume (broadcast per acre or individual plant)	Time of application	Remarks
			Broadcast rate per acre	Individual plant/spot treatment			
Sagebrush, sand	2,4-D* low volatile ester	2,4-D	1 to 2 qt (1 to 2 lb)		2-4 gal water solution for aerial spray. 10-25 gal water solution for ground broadcast application. Use surfactant as needed.	May 1 to June 15 with good growing conditions	Do not spray when plants are defoliated by late frost, drought, or other unfavorable growing conditions. Do not spray near susceptible crops.
	Spike 20P	tebuthiuron	2 1/2 to 3 3/4 lb of pellets (1/2 to 3/4 lb)		Aerial or ground broadcast	Any time of year. Optimum is prior to rainy season.	
Saltcedar	Arsenal, Habitat	imazapyr		1 gal per 100 gal water (2 lb per 100 gal water with 0.25% surfactant)	Individual plant treatment or ground application	August through September	Spray to wet, especially the terminal ends of all branches. Allow two full growing seasons before follow-up treatment.
	Tank mix Arsenal, Habitat + Roundup*	imazapyr + glyphosate		1/2 to 1 gal + 1/2 to 1 gal (1 to 2 lb + 2 to 4 lb per 100 gal water with 0.25% surfactant)			
	Tank mix Arsenal, Habitat + Rodeo	imazapyr + glyphosate		1/2 to 1 gal + 1/2 to 1 gal (1 to 2 lb + 2 to 4 lb per 100 gal water with 0.25% surfactant)		Aerial broadcast Add 0.25% nonionic Surfactant	10-15 gal per acre total solution. Allow two full growing seasons before follow-up treatment.
	Arsenal, Habitat	imazapyr	1/2 gal (1 lb)				
	Tank mix Arsenal, Habitat + Roundup*	imazapyr + glyphosate	1 to 1 1/2 qt + 1 to 2 pt (1/2 to 3/4 lb + 1/2 to 1 lb)				
	Tank mix Arsenal, Habitat + Rodeo	imazapyr + glyphosate	1 to 1 1/2 qt + 1 to 1 1/2 pt (1/2 to 3/4 lb + 1/2 to 1 lb)				
Sand shinnery oak	Spike 20P	tebuthiuron	2 1/2 to 5 lb of pellets (1/2 to 1 lb)		Aerial broadcast	Any time of year. Optimum is prior to rainy season.	
	Velpar L	hexazinone		2 to 4 ml per 33 square ft of canopy diameter	Individual plant treatment	Any time of year. Optimum is prior to rainy season.	Apply undiluted Velpar L to soil surface within 3 ft of stem base or in a grid pattern. Use exact delivery handgun applicator. Do not apply to frozen or snow-covered ground.
	Pronone Power Pellets	hexazinone		1 to 2 pellets per 33 square ft. of canopy diameter			
	Spike 20P	tebuthiuron		1/2 oz per 22 sq ft when treating a thicket or clump			Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground.
Shrub oak (wavy leaf, Gambel oak)	Spike 20P	tebuthiuron	3 3/4 to 7 1/2 lb of pellets (3/4 to 1 1/2 lb)		Aerial broadcast	Any time during year. Optimum is prior to rainy season.	Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground.
	Velpar L	hexazinone		2 to 4 ml per 33 square ft of canopy diameter	Individual plant treatment. Any time during year.	Optimum is prior to rainy season	Apply undiluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not use on clay soils. Do not apply to frozen or snow-covered ground.
	Pronone Power Pellets	hexazinone		1 to 2 pellets per 33 square ft. of canopy diameter			

Table 1. Herbicides for controlling undesirable brush and weeds on rangelands.

Plant controlled	Trade name and product	Herbicide (common name and active ingredient)	Herbicide quantity (active ingredient or acid equivalent in parenthesis)		Spray volume (broadcast per acre or individual plant)	Time of application	Remarks
			Broadcast rate per acre	Individual plant/spot treatment			
Shrub oak (wavy leaf, Gambel oak) (Continued)	Spike 20P	tebuthiuron		1/4 oz per 22 sq ft when treating a clump or thicket	Individual plant treatment. Any time during year.	Optimum is prior to rainy season	Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground
	Arsenal	imazapyr		1 gal per 100 gal water (1 gal per 100 gal water)	Individual plant treatment or ground application	Any time during growing season when growing conditions are good	Spray to wet. Use 0.25% nonionic surfactant
Skunkbrush sumac	Spike 20P	tebuthiuron	3 3/4 to 5 lb of pellets (3/4 to 1 lb)		Aerial ground broadcast. Any time during year.	Optimum is prior to rainy season	Do not apply to frozen or snow-covered ground.
	Spike 20P	tebuthiuron		1/4 to 1/2 oz per 3 ft of canopy diameter or height	Individual plant treatment	Any time during year. Optimum is prior to rainy season.	Distribute uniformly under canopy.
Snakeweed (broom, threadleaf, perennial broomweed, turpentine weed)	Tordon 22K**	picloram	1 pt to 1 qt (1/4 to 1/2 lb)		2-4 gal water for aerial spray; 10-25 gal for ground broadcast application. Add surfactant as needed.	Fall, after full bloom, or spring when growing conditions are good	Use drift control agent and add emulsifier to oil. Foliar sprays are recommended where broom snakeweed is the primary species.
	Tank mix Tordon 22K** + 2,4-D	picloram + 2,4-D	1 pt to 1 qt + 1 qt (1/4 to 1/2 lb + 1 lb)				
	Grazon P+D	picloram:2,4-D	1 to 2 qt (1:4 mixture) (5/8 to 1 1/4 lb)				
	Weedmaster	dicamba:2,4-D	1 1/2 to 2 qt (1:3 mixture) 1 1/2 to 2 lb				
	Escort XP	metsulfuron	5/8 to 4/5 oz (3/8 to 1/2 oz)				
	Cimarron Plus	metsulfuron + chlorsulfuron	6/10 oz (1/2 oz)				
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate II (1/2 oz + 2 pt)				
	Spike 20P	tebuthiuron	3 3/4 to 5 lb of pellets (3/4 to 1 lb)		Aerial broadcast	Any time during year. Optimum is prior to rainy season.	Use only on coarse-textured soils.
Starthistle, yellow, malta, and purple	Escort XP	metsulfuron	1 oz (3/5 oz)		10-25 gal for ground broadcast. Use surfactant as per label.	Seedling to early bud	
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate III (1 oz + 4 pt)				
	Overdrive	dicamba: diflufenzopyr	4 oz (1/4 lb)				
	Remedy	triclopyr	3 pt (1 1/2 lb)			Spring to early bud	
	2,4-D*	2,4-D	1 qt (1 lb)				
	Arsenal	imazapyr	1 pt (1/4 lb)				
	Tordon 22K**	picloram	1 pt (1/4 lb)				
	Banvel, Clarity	dicamba	1 pt (1 lb)				
	Reclaim	clopyralid	2/3 pt (1/4 lb)				
	Grazon P+D	picloram:2,4-D	2 qt (1:4 mixture) (1 1/4 lb)				
Milestone	aminopyralid	3 to 5 oz (1/20 to 1/12 lb)					
Tarbush	Spike 20P	tebuthiuron	2 1/2 to 3 3/4 lb of pellets (1/2 to 3/4 lb)		Aerial broadcast	Any time during year. Optimum is prior to rainy season.	

Table 1. Herbicides for controlling undesirable brush and weeds on rangelands.

Plant controlled	Trade name and product	Herbicide (common name and active ingredient)	Herbicide quantity (active ingredient or acid equivalent in parenthesis)		Spray volume (broadcast per acre or individual plant)	Time of application	Remarks	
			Broadcast rate per acre	Individual plant/spot treatment				
TARBUSH (Continued)	Tordon 22K**	picloram		2 to 4 ml per 3 ft of canopy diameter	Individual plant treatment. Apply any time during year.	Optimum is prior to rainy season.	Apply undiluted Tordon 22K to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not apply to frozen or snow-covered ground.	
	Spike 20P	tebuthiuron		1/3 to 1/2 oz per 3 ft of canopy diameter				
Thistle, musk, scotch, Canada, and bull	Escort XP	metsulfuron	1/2 to 1 oz (3/10 to 3/5 oz)		10–25 for ground broadcast. Add 0.25% nonionic surfactant.	Rosette		
	Cimarron Plus	metsulfuron + chlorsulfuron	6/10 to 1 1/4 oz (1/2 to 1 oz)					
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate II to III (1/2 oz + 2 pt to 1 oz + 4 pt)					
	Telar XP	chlorsulfuron	1/2 to 1 oz (3/8 to 3/4 oz)					
	Tordon 22K**	picloram	1 to 2 pt (1/4 to 1/2 lb)					Before bolting
	Overdrive	dicamba: diflufenzopyr	4 to 6 oz (1/4 to 3/8 lb)					Rosette to bolting
	Plateau	imazapic	8 to 12 oz (1/8 to 3/16 lb)					Early spring or fall
	Curtail	clopyralid:2,4-D	1 to 2 qt (1:5 mixture) 3/5 to 1 1/5 lb					
	Tank mix Remedy + 2,4-D	triclopyr + 2,4-D	1 1/3 pt + 1 to 2 qt (2/3 lb + 1 to 2 lb)					
	Milestone	aminopyralid	3 to 7 oz (1/20 to 1/10 lb)					
Threadleaf or Riddel's groundsel	2,4-D*	2,4-D	2 to 4 qt (2 to 4 lb)		10–25 gal for ground broadcast. Add 0.25% v/v nonionic surfactant. 2–4 gal for aerial broadcast	Actively growing, prior to bloom		
	Weedmaster	dicamba:2,4-D	1 to 2 qt (1:3 mixture) 1 to 2 lb					
	Tank mix Banvel + 2,4-D*	dicamba + 2,4-D	1/2 to 1 pt + 1 1/2 to 3 pt (1/4 to 1/2 lb + 3/4 to 1 1/2 lb)					
	Banvel	dicamba	1 pt (1/2 lb)					
	Tank mix Tordon 22K** +2,4-D	picloram + 2,4-D	1 to 2 pt + 1 1/2 to 3 pt (1/4 to 1/2 lb + 3/4 to 1 1/2 lb)					
	Grazon P+D	picloram:2,4-D	1 to 2 qt (1:4 mixture) 5/8 to 1 1/4 lb					
	Tordon 22K**	picloram	1 qt (1/2 lb)					
	Telar XP	chlorsulfuron	1/2 to 1 oz (3/8 to 3/4)					

Table 1. Herbicides for controlling undesirable brush and weeds on rangelands.

Plant controlled	Trade name and product	Herbicide (common name and active ingredient)	Herbicide quantity (active ingredient or acid equivalent in parenthesis)		Spray volume (broadcast per acre or individual plant)	Time of application	Remarks
			Broadcast rate per acre	Individual plant/spot treatment			
Threadleaf or Riddel's groundsel (Continued)	Escort XP	metsulfuron	5/8 to 4/5 oz (3/8 to 1/2 oz)				
	Cimarron Plus	metsulfuron + chlorsulfuron	8/10 to 1 oz (6/10 to 8/10 oz)				
	Cimarron Max	metsulfuron + 2,4-D: dicamba	Rate II (1/2 oz + 2 pt)				
Water hemlock, western	2,4-D*	2,4-D	1 to 2 qt (1 to 2 lb)		10–25 gal for ground broadcast	Flower bud stage	See label
Willows	2,4-D*	2,4-D		2 to 3 qt (2–3 lb pr 100 gal of water solution)	Individual plant treatment (2–3 lb per 100 gal of water solution)	Spring, when leaves are fully expanded. Good growing conditions.	Wet foliage thoroughly. Do not spray when plants are defoliated by late freeze, hail, insects, or other unfavorable conditions.
	Arsenal, Habitat	imazapyr		1 gal (2 lb per 100 gal water + 0.25% surfactant)	Individual plant treatment	Any time during growing season. Good growing conditions.	
	Tank mix Arsenal + Roundup*	imazapyr + glyphosate		1/2 to 1 gal + 1/2 to 1 gal (1 to 2 lb + 2 1/2 to 5 lb per 100 gal water + 0.25% surfactant)			
	Tank mix Arsenal, Habitat + Rodeo	imazapyr + glyphosate		1/2 to 1 gal + 1/2 to 1 gal (1 to 2 lb + 2 1/2 to 5 lb per 100 gal water + 0.25% surfactant)			
Yucca	Velpar L	hexazinone		4 to 7 ml per whorl	Individual plant treatment	Any time during year. Optimum is prior to rainy season.	Apply undiluted Velpar L directly to whorl
	Remedy	triclopyr		3 to 4 ml per whorl	Individual plant treatment	Any time during year	Apply to every whorl. May be mixed with water or diesel.
	Arsenal	imazapyr		2 to 3 ml per whorl			Apply to every whorl. May be mixed with water.
	Cimarron Max + 2,4-D low volatile ester	metsulfuron + chlorsulfuron + 2,4-D	Rate II (1/2 oz + 2 pt) + 1 pt to 1 1/2 pt 2,4-D (1/2 lb to 1/4 lb)	Spray each whorl thoroughly mix in 100 gal water	4 gal/ac minimum	Spring through fall	Crop oil concentrate, MSO or MSO/organosilicone are preferred adjuvants
	Cimarron Plus	metulfuron + 2,4-D: dicamba	5/8 oz + 1 qt (1 lb)				

Appendix A. Common Chemical and Product Names of Herbicides

The herbicides are identified by the accepted Weed Science Society of America common name or other common designation, the correct chemical names as required on the label, and, where practical, one

or more product names. Herbicides marketed under three or more labels have been designated “several manufacturers” rather than attempting to list all the trade formulations.

Herbicide Common name	Chemical Name	Trade Name	Active Ingredient or Acid Equivalent
2,4-D	(2,4-dichlorophenoxy) acetic acid	Several manufacturers	Amine salts and esters, 4 lb/gal, 6 lb/gal, others
Aminopyralid	2-pyridine carboxylic acid, 4-amino-3,6-dichloro-2-pyridinecarboxylic acid	Milestone	2 lb/gal
Aminopyralid:2,4-D (1:8)	See aminopyralid and 2,4-D	GrazonNext	3 lb/gal
Aminopyralid:Metsulfuron	See aminopyralid and metsulfuron	Chaparral	0.62 lb/gal: 0.0945 lb of product
Atrazine	6-chloro-N-ethyl-N'-(1-methylethyl)-1,3,5-triazine-2,4-diamine	Several manufacturers	----
Chlorsulfuron	2-chloro-N-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino] carbonyl] benzenesulfonamide	Telar XP	75%
Clopyralid	3,6-dichloro-2-pyridinecarboxylic acid	Reclaim, Stinger, Transline	3 lb/gal
Clopyralid:2,4-D (1:5)	See clopyralid and 2,4-D	Curtail	2 3/8 lb/gal
Dicamba	3,6-dichloro-2-methoxybenzoic acid	Banvel, Clarity, Overdrive	4 lb/gal
Dicamba:2,4-D (1:3)	See dicamba and 2,4-D	Weedmaster	4 lb/gal
Diesel fuel oil	Refined petroleum fractions	Several manufacturers	
Diflufenzopyr:Dicamba	2-(1-[[[(3,5-difluorophenylamino)carbonyl] hydrazono]ethyl]-3-pyridinecarboxylic acid, sodium salt and See dicamba	Overdrive	0.2 lb and 0.5 lb/lb of product
Fluroxypyr	1-methylheptylester:[(4-Amino-3,5-dichloro-6-fluoropyridin-2-yl)oxy] acetic acid	Vista	1.5 lbs/gal
Glyphosate	N-(phosphonomethyl) glycine	Rodeo	5 lb/gal
Glyphosate***	N-(phosphonomethyl) glycine	Several manufacturers	4 lb/gal
Glyphosate:2,4-D (1:1 1/4)	See Glyphosate and 2,4-D	Landmaster	2 1/2 lb/gal
Hexazinone	3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4 (1H,3H)-dione	Velpar L	2 lb/gal
Imazamox	2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-methoxymethyl-3-pyridinecarboxylic acid	Clearcast	1.0 lb/gal
Imazapic	(±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid	Plateau, Journey	2 lb/gal
Imazapyr	(±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid	Arsenal, Habitat	2 lb/gal
Metsulfuron	methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-amino] carbonyl] amino] sulfonyl] benzoate	Escort XP	60%
Metsulfuron:Chlorosulfuron (3:1)	See metsulfuron and chlorsulfuron	Cimarron Plus	48% metsulfuron 15% chlorsulfuron
Metsulfuron Dicamba:2,4-D 1:3	See metsulfuron, dicamba and 2,4-D	Cimarron Max	60% (Part A) 3.87 lb/gal (Part B)
Paraquat	1,1'-dimethyl-4,4' bipyridinium ion	Several manufacturers	----
Picloram	4-amino-3,5,6-trichloro-2-pyridinecarboxylic acid	Tordon 22K**	2 lb/gal
Picloram:2,4-D (1:4)	See Picloram and 2,4-D	Grazon P+D	2 1/2 lb/gal
Picloram:Fluroxypyr	See picloram and fluroxypyr	Surmount	1.34 lb/gal
Quinclorac	3,7-dichloro-8-quinolinecarboxylic acid	Paramount	75%
Sulfometuron	methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl) amino] carbonyl] amino] sulfonyl] benzoate]	Oust	75%
Tebuthiuron*	N-[5-(1,1-dimethylethyl)-1,3,4-thiadiazol-2-yl]-N,N'-dimethylurea	Spike 20P	20%
Triclopyr	[(3,5,6-trichloro-2-pyridinyl)oxy] acetic acid	Remedy Ultra, Garlon 4 Ultra, Garlon 3A Ultra	4 lb/gal 3 lb/gal

*Under supervision of U.S. government agencies, Spike 20P may be applied by aerial or ground equipment at lower than recommended rates if partial control is desired.

**Tordon 22K is a restricted use product.

***Glyphosate and 2,4-D are sold under several different trade names and formulations. Check the active ingredient rate on the label to determine the correct product application rate.

PLANT INDEX

Plants requiring the same treatment are grouped together

Common Name of Species	Page	Common Name of Species	Page
Native Weeds		Native Shrubs and Trees (continued)	
Algerita	2	Juniper (cedar)	7
Bitter sneezeweed	2-3	Lotebush	8
Bitterweed, western	2-3	Mesquite, grassland	9
Broomweed (annual or common)	2-3	Mesquite, mixed brush	9
Buckwheat	2-3	Prickly pear	4
Camphorweed	2-3	Rabbitbush	10
Cattail, common	4	Sagebrush, big	10
Cocklebur	2-3	Sagebrush, fringed	10
Crazyweed (silky or Lambert's)	5	Sagebrush, sand	11
Gumweed, curlycup	6	Sand shinnery oak	11
Horehound	2-3	Shrub oak (wavy leaf, Gambel oak)	11-12
Horsemint	2-3	Skunkbrush sumac	12
Horsetail, smooth, scouring rush	7	Snakeweed (broom, threadleaf, perennial broomweed, turpentine weed)	12
Houndstongue	7	Tarbrush	12-13
Lakeweed	2-3	Whitethorn acacia	3
Larkspur, geyer, tall, or duncecap	8	Willows	14
Locoweed, whitepoint	5	Wolfberry	9
Locoweed, woolly	5	Yucca	14
Milkvetch	2-3		
Milkweed, showy and related species	9	Noxious Weeds and Shrubs	
Mustard	2-3	African rue	2
Oxeye daisy	9	Bindweed, field	2
Pepperweed	2-3	Black henbane	3
Pinque	2-3	Bursage, skeletonleaf	3
Poison ivy	10	Camelthorn	3
Poison oak	10	Cheatgrass	5
Poverty sumpweed	10	Dalmation and yellow toadflax	5
Prairie coneflower	2-3	Downy brome	5
Ragweed (common or western)	2-3	Dyer's woad	6
Rayless goldenrod	10	Goatgrass, jointed	6
Sunflower	2-3	Halogeton	6
Thistles and nettles	2-3	Hoarycress, whitetop and related species	6-7
Threadleaf or Riddel's groundsel	13-14	Knapweed, diffuse and spotted	2-3, 7
Water hemlock, western	14	Knapweed, Russian	8
		Leafy spurge	8
Native Shrubs and Trees		Perennial pepperweed	9
Catclaw acacia	4	Russian olive	10
Catclaw mimosa	3	Saltcedar	11
Cholla	4	Starthistle, yellow, malta, and purple	12
Creosotebush	5, 9	Thistle, musk, scotch, Canada, and bull	13
Iris, Rocky Mountain	7		

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