

CHEMICAL WEED AND BRUSH CONTROL



SUGGESTIONS FOR RANGELAND

2007 UPDATE

*This publication provides an update for some of the herbicide recommendations contained in B-1466.
The herbicide control recommendations contained in this update for a specific weed
or brush species supercedes any information contained in the original publication.*

Common, Chemical and Product Names of Herbicides*

Herbicide common name	Chemical name	Product name	Active ingredient or acid equivalent
Aminopyralid	2-pyridine carboxylic acid, 4-amino-3, 6-dichloro-2-pyridine carboxylic acid, triisopropanolammonium salt	Milestone	2 lbs./gal.
Aminopyralid 1:8, 2, 4-D	See aminopyralid and 2, 4-D	Forefront	3 lbs./gal.
Clopyralid	3,6-dichloro-2-methoxybenzoic acid	Reclaim, Pyramid R&P	3 lbs./gal.
2,4-D	(2,4-dichlorophenoxy) acetic acid	Weedar 64, Formula 40, Hi-Dep, Weedone LV4, Esteron 99 and others	concentration varies depending on product
Dicamba	3,6-dichloro-2-methoxybenzoic acid	Banvel, Clarity, Vision	4 lbs./gal.
Dicamba:2,4-D(1:3)	See dicamba and 2,4-D	Weedmaster, Banvel + 2,4-D, RangeStar	4 lbs./gal.
Diesel fuel oil or kerosene	refined petroleum fractions	Several manufacturers	
Fluroxypyr	1-methylheptyl ester: ((4-amino-3,5-dichloro-6-fluoropyridin-2-yl)oxy)acetic acid	Vista	1.5 lbs./gal.
Glyphosate	N-(phosphonomethyl) glycine	Several including Rodeo**, Roundup, Roundup Ultradry, Glyosate 417	isopropylamine salt*, concentration varies depending on the product
Hexazinone	3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4(IH, 3H)-dione	Velpar L, Pronone Power Pellet	2 lbs./gal. (Velpar L) 75% (Pronone Power Pellet)
Imazapyr	2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid	Arsenal, Habitat**	2 lbs./gal.
Metsulfuron methyl	methyl 2[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino] sulfonyl] benzoate	Escort, Clean Pasture, MSM 60DF	60%
Metsulfuron:Chlorosulfuron 3:1	See Metsulfuron methyl + 2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl]benzenesulfonamide	Cimarron Plus	48% metsulfuron 15% Chlorosulfuron
Metsulfuron:Chlorosulfuron 1:1	See metsulfuron: Chlorosulfuron	Cimarron X-Tra	30% Metsulfuron 37.5% Chlorosulfuron
Metsulfuron methyl Dicamba:2,4-D(1:3)	See metsulfuron methyl, vision and 2,4-D	Cimarron Max	60% (Part A) 3.87 lbs./gal. (Part B)
Picloram	4-amino-3,5,6-trichloro-2-pyridinecarboxylic acid	Tordon 22K, Triumph 22K, Picloram 22K	2 lbs./gal.
Picloram:Fluroxypyr(1:1)	See picloram and Fluroxypyr	Surmount	1.34 lbs./gal.
Picloram:2,4-D(1:4)	See Picloram and 2,4-D	Grazon P+D, Gunslinger	2.5 lbs./gal.
Tebuthiuron	N-[5-(1,1-dimethylethyl)-1,3,4-thiadiazol-2-yl]-N-N'-dimethylurea	Spike 20P, Spike 80 DF	20% (Spike 20P) 80% (Spike 80 DF)
Triclopyr	{(3,5,6-trichloro-2-pyridinyl)oxy}acetic acid	Clear Pasture, Pathfinder II Remedy Ultra, Triclopyr 4 EC	0.75 lbs./gal. (Pathfinder II) 4 lbs./gal. (all others)
Triclopyr:Fluroxypyr (3:1)	See triclopyr and 1-methylheptyl ester:((4-amino-3,5-dichloro-6-fluoropyridin-2-yl)oxy)acetic acid	PastureGard	2.0 lbs./gal.
Triclopyr:2,4-D(1:2)	See triclopyr and 2,4-D	Crossbow	3 lbs./gal.

*Herbicides have been identified by the accepted Weed Science Society of America common name, and when practical, one or more product names.

**Aquatic label

Items in gray boxes are recent changes approved by the Rangeland Herbicide Use Committee.

Page	Weed Controlled	Herbicide (common and chemical names – page 4)	Herbicide quantity (active ingredient rate in parenthesis)		Spray volume (per acre for broadcast, as described for individual plant)	Time to apply	Remarks
			Broadcast rate per acre	Individual plant/ spot treatment			
6	African rue	Velpar L		VH 2 ml/plant	Use an exact delivery handgun to apply undiluted herbicide to soil surface at the edge of the plant canopy.	Spring or summer.	Do not use on heavy clay or caliche soils.
		Pronone Power Pellets		1 pellet/plant			
		Spike 20 P	H 7.5 lbs. (1.5 lbs.)				
		Arsenal	H 1 qt. (0.5 lbs.)	VH 0.5%	10 to 25 gal./ac. for ground broadcast. Thoroughly wet foliage for individual plant treatment. Add 1 to 2 qts. of surfactant per 100 gals. water.	Late September through October (to first frost).	
7	Broomweed (annual or common), plantain (tallow weed), wild carrot	Escort or Cimarron	VH 0.1 oz.		2 to 4 gals. water for aerial spray; 10 to 25 gals. water for ground broadcast application. Add 1 to 2 qts. of surfactant per 100 gals. of water.	Spring, weeds less than 4 inches tall	
		Cimarron Plus	VH 0.125 oz.				
		Cimarron X-tra	VH 0.2 oz.				
8	Broom snakeweed (perennial broomweed) (continued)	Escort or Cimarron	VH 0.6 oz.		2 to 4 gals. water for aerial spray; 10 to 25 gals water for ground broadcast application. Add 1 to 2 qts. of surfactant per 100 gals. of water.	Optimum time is in the fall, but may be applied in the spring.	
		Cimarron Plus	VH 0.75 oz.				
		Cimarron X-tra	VH 1.2 oz.				
		Cimarron Max	H to VH Rate 1 to Rate 2				
		Spike 20P	VH 3.75 lbs. of pellets (¾ lb.)	VH ¼ oz. of pellets (1/30 oz.) per 100 sq. ft.	Any time—optimum period is Oct. 1 to April 1, except in the Trans-Pecos where optimum period is May 1 to July 1.	Use only on sand, loamy sand, sandy loam, loam, silt loam, silt or sandy clay loam soils.	
10	Lespedeza	Remedy	VH 1 to 2 pts. (½ to 1 lb.)		Ground broadcast 20 to 20 gals. per acre with 1 to 2 qts. of surfactant per 100 gals. of water.	June through August under good growing conditions.	Plants need to be 12 to 18 inches tall before spraying. Use the higher rate if plants are large, approaching maturity, or if the infestation level is high.
		Escort or Cimarron	H 0.5 oz.				Begin application at flower bud initiation through full bloom.
		Cimarron Plus	H 0.7 oz.				
		Cimarron X-tra	H 1.0 oz.				
		Cimarron Max	H Rate 2				

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11	Rayless goldenrod (jimmyweed)	Escort or Cimarron	VH 0.75 oz.		2 to 4 gals. of water for aerial spray; 10 to 25 gals. of water for ground broadcast application. Add 1 to 2 qts. of surfactant per 100 gals. of water. Thoroughly wet foliage for individual plant treatment. Add 1 to 2 qts. of surfactant per 100 gals. of water.	Fall.	
		Cimarron Plus	VH 1.0 oz.				
		Cimarron X-tra	VH 1.5 oz.				
		Surmount	VH 6 pt. (1.0 lb.)	VH 2%			
		Tordon 22K	VH 1 qt. (½ lb.)	VH 1%			
11	Threadleaf Groundsel	Escort or Cimarron	VH 0.4 oz.		2 to 4 gals. of water for aerial spray; 10 to 25 gals. of water for ground broadcast application. Add 1 to 2 qts. of surfactant per 100 gals. of water.		
		Cimarron Plus	VH 0.5 oz.				
		Cimarron X-tra	VH 0.8 oz.				
		Cimarron Max	VH Rate 2				
12	Upright Prairie-coneflower	Escort or Cimarron	VH 0.2 oz.		2 to 4 gals. water for aerial spray; 10 to 25 gals. of water for ground broadcast application. Add 1 to 2 qts. of surfactant per 100 gals. of water.	Spring, before flower stalk development.	
		Cimarron Plus	VH 0.25 oz.				
		Cimarron X-tra	VH 0.4				
13	Baccharis (dryland willow, Roosevelt willow, seep willow or willow baccharis)	2,4-D low volatile ester	H 3 pts. to 3 qts. (1.5 to 3 lbs.) 4 lb./gal. product	H 1%	4 to 5 gals. of water for aerial spray. 15 to 20 gals. water for ground broadcast. For individual plant treatment thoroughly wet the entire foliage, stems and trunks. Add 1 to 2 qts. of surfactant per 100 gals. of water. For individual plant treatment thoroughly wet the entire foliage, stems and trunks. Add 1 to 2 qts. of surfactant per 100 gals. of water.	Spring, when leaves are fully expanded and dark green in color.	
		Grazon P+D		H 1%			
		Weedmaster		H 1%			

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22	Mesquite (suppression and weed control)	2,4-D amine or low volatile ester	L 2 to 4 qts. (2 to 4 lbs.)	M 2% (4 lbs./gal. product)	<p>For aerial applications suggested total spray volume is 4 gals./acre. Use oil-in-water emulsion (1 to 5 oil to water ratio considered optimum), or water plus surfactant, crop oil or methylated seed oil.</p> <p>For ground broadcast applications the suggested total spray volume is 10 to 25 gals./acre. Use oil-in-water emulsion (1 to 5 oil to water ratio considered optimum), or water plus surfactant, crop oil or methylated seed oil.</p> <p>Thoroughly wet foliage for individual plant treatments. Add 1 to 2 qts. of surfactant per 100 gals. of water or an oil-in-water emulsion (5% diesel + 95% water).</p>	<p>Late spring to mid-summer with mature leaves (dark green color). Optimum period of application begins when soil temperature at a depth of 12 inches reaches 75 degrees F and continues for 45 days.</p> <p>If treatment is applied prior to optimum soil temperatures, efficacy will be decreased and multiple applications over a period of years may be necessary to maintain less than 10% canopy.</p>	<p>Treatments will control many weeds. When using oil-in-water emulsion use emulsifier. Use of a treatment with a low control rating may result in multi-stem growth that may be more difficult to control in the future.</p>
		Grazon P+D	L 1 to 1.5 qts. (0.6 to 0.9 lbs.)				
		Weedmaster	L 1 to 1.5 qts. (1 to 1.5 lbs.)				
		Cimarron Max	L Rate 1 to Rate 2				
		Tordon 22K + 2,4-D amine or low volatile ester	L 0.5 to 0.75 pt. ($\frac{1}{8}$ to $\frac{3}{16}$ lb.) Tordon 22K + 1 to 1.5 qts. (1 to 1.5 lbs.) 2,4-D, 4 lbs./gal. product				
		Banvel + 2,4-D amine or low volatile ester	L 0.5 to 0.75 pt. ($\frac{1}{4}$ to $\frac{3}{8}$ lb.) Banvel + $\frac{3}{4}$ to 1 $\frac{1}{8}$ qts. ($\frac{3}{4}$ to 1 $\frac{1}{8}$ lbs.) 2,4-D, 4 lbs./gal. product				
		Remedy	L 1 pt. to 1 qt. (0.5 lb. to 1 lb.)	M 1%			
		Banvel	L 1 pt. to 1 qt. (0.5 lb. to 1 lb.)	M 1%			

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23	Mesquite	Remedy		VH 2% in diesel fuel oil	Apply to the base of the trunk from 12 to 18 inches above the soil surface. Apply until solution puddles on soil surface.	Anytime soil is dry and pulled away from the trunk.	
		Reclaim	M to H ½ qt. to ⅔ qt. (¼ to ½ lb.)	VH 1%	For aerial applications suggested total spray volume is 4 gals./acre. Use oil-in-water emulsion (1 to 5 oil to water ratio considered optimum), or water plus surfactant, crop oil or methylated seed oil. For ground broadcast applications the suggested total spray volume is 10 to 25 gals./acre. Use oil-in-water emulsion (1 to 5 oil to water ratio considered optimum), or water plus surfactant, crop oil or methylated seed oil. Thoroughly wet foliage for individual plant treatments. Add 1 to 2 qts. surfactant per 100 gals. of water or an oil-in-water emulsion (5% diesel + 95% water).	Late spring to mid-summer with mature leaves (dark green color). Optimum period of application begins when soil temperature at a depth of 12 inches reaches 75 degrees F and continues for 45 days thereafter. When Reclaim is used alone or in a tank mix the period should continue for 60 days. For optimum root kill do not spray if white flowers or bean elongation are observable, if over 25% of the leaf canopy is damaged due to insects, disease or hail, if soil temperatures are less than 75 degrees F, 1 ft. deep, or if new vegetative growth is present due to recent rains.	Use 1 pt./ac. Tordon 22K plus ½ pt./ac. Remedy, ½ pt./ac. Banvel plus ½ pt./ac. Reclaim, 1 pt./ac. Tordon 22K plus ½ pt./ac. Banvel, 1 pt./ac. Tordon 22K plus ⅓ qt./ac. Reclaim and ⅓ qt./ac. Reclaim only in West Texas. Banvel and Banvel mixtures have been more effective in West Texas than in other parts of the state. Use mixtures that include ¼ pt./ac. Remedy and ⅓ pt./ac. Reclaim only in Montague, Wise, Parker, Hood, Somervell, Bosque, Coryell, Lampasas, Burnet, Blanco, Kendall, Bandera, Real, Edwards and Val Verde counties and those counties north and west of the named counties. Mixtures that include ½ pt./ac. Remedy and ⅓ pt./ac. Reclaim will give better control than mixtures with ¼ pt./ac. Remedy and ⅓ pt./ac. Reclaim. When using oil-in-water emulsion, use emulsifier added to oil for proper emulsion. Use of a treatment with a low-control rating may result in a multi-stem growth form that may be more difficult to control in the future.
		Remedy + Tordon 22K	M ½ to 1 pt. (¼ to ½ lb.) Remedy + 1 to 2 pts. (¼ to ½ lb.) Tordon 22K	M to H ½% Remedy + ½% Tordon 22K			
		Remedy + Banvel	L ½ to 1 pt. (¼ to ½ lb.) Remedy + ½ to 1 pt. (¼ to ½ lb.) Banvel	M ½% Remedy + ½% Banvel			
		Remedy + Reclaim	M to H ¼ to 1 pt. (⅛ to ½ lb.) Remedy + ⅓ to ⅔ pt. (⅛ to ½ lb.) Reclaim	VH ½% Remedy + ½% Reclaim			
		Tordon 22K + Banvel	M 1 to 2 pts. (¼ to ½ lb.) Tordon 22K + ½ to 1 pt. (¼ to ½ lb.) Banvel	H ½% Remedy + ½% Banvel			
		Tordon 22K + Reclaim	M to H 1 to 2 pts. (¼ to ½ lb.) Tordon 22K + ⅓ to ⅔ qt. (¼ to ½ lb.) Reclaim	VH ½% Tordon 22K + ½% Reclaim			
26	Pricklypear, tasajillo	Tordon 22K	H 1 pt. to 1 qt. (¼ lb. to ½ lb.)	VH 1%			
		Surmount	H 1 pt. to 1 qt. (¼ lb. to ½ lb.)	VH 1%			
		Grazon P+D	H 1 gal. (2.5 lbs.)	VH 2%			
		Vista		VH 1%			
		Gramoxone Extra	These two treatments are deleted from B-1466.				
		Tank mix Tordon 22K with Gramoxone Extra					

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29	Saltcedar	Arsenal	VH 2 qts. (1 lb.)	VH 1%	Minimum 10 gals./acre for aerial or ground broadcast sprays. Thoroughly wet foliage for individual plant treatment. Add 1 to 2 qts. of surfactant per 100 gals. water.	July through September or until leaves begin to turn yellow.	When exposure to aquatic environments is possible use aquatic labels of Arsenal and Roundup (see table “Common, Chemical and Product Names of Herbicides”). Arsenal alone or in combination with Roundup will cause damage to desirable	
		Arsenal + Roundup	VH 1 qt. (½ lb.) Arsenal + 1 pt. (½ lb.) Roundup	VH ½% Arsenal + ½% Roundup				
		Remedy		VH 25% in diesel fuel oil	Apply to lower 12 to 18 inches of trunk to wet the trunk; do not spray to point of runoff. Apply completely around the trunk.	Growing season when leaves have mature leaves.		This is commonly called the low volume basal application method. Use a hollow cone nozzle with X1 orifice.
		Tank mix Arsenal with Rodeo (glyphosate)	This recommendation is deleted, and moved to the remarks section.					
30	Yucca	Remedy		H 2% in diesel fuel oil	Spray the center of each individual whorl of leaves to the point of runoff	Anytime	Complete coverage of leaves is not necessary. The crown of each plant must be thoroughly wetted with the herbicide mixture.	
				H 2% in 1:5 diesel fuel oil:water emulsion				May through September.
				VH 15% in diesel fuel oil		Use an adjustable cone nozzle (X1 orifice) and spray a 2 second burst into each whorl.		Spring and summer.
				H Undiluted 2 to 4 ml./plant whorl		Use an exact delivery handgun set at 2 or 4 ml. per whorl dose.		
		Pathfinder II		VH Undiluted	Use an adjustable cone nozzle (X1 orifice) and spray a 2 second burst into each whorl.		Direct spray into the center of each whorl.	
		Cimarron Max + 2,4-D low volatile ester	H Rate 2 Cimarron Max + 1 pt. to 1.5 pts. 2,4-D (4 lb. a.i./gal. product)		Crop oil concentrate, modified seed oil or modified seed oil/ organosilicone are the preferred adjuvants. For aerial applications a minimum of 4 gals./ac. total spray volume is recommended.	Spring through fall prior to frost.	A second follow-up application of Cimarron Max at Rate 1 or Rate 2 plus 2,4-D low volatile ester at 0.5 to 0.75 lbs. a.i./ac. within 2 years of the initial application may be required to control yucca seedlings and regrowth from rootstocks..	
New	Burrobrush	Tordon 22K		VH 1%	Thoroughly wet foliage for individual plant treatment.	April through July.		
		Grazon P+D		VH 2%				

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