

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, trisopropylammonium salt	Milestone	2 lb/gal
Aminopyralid:2,4-D (1:8)	See Aminopyralid and 2,4-D	GrazonNext HL	3.75 lb/gal
Aminopyralid:Clopyralid (1:4:6)	See Aminopyralid and Clopyralid	Sendero	2.8 lb/gal
Clopyralid	3,6-dichloro-2-pyridinecarboxylic acid	Reclaim, Pyramid R&P, Clopyralid 3	3 lb/gal
2,4-D	(2,4-dichlorophenoxy) acetic acid	Weedar 64, Broad Range 55, HI-Dep, Weedone LV4, Esteron 99 and others	amine salts, free acids and esters of variable concentration
Dicamba	3,6-dichloro-2-methoxybenzoic acid	Banvel, Clarity, Vision	4 lb/gal
Dicamba:2,4-D(1:3)	See Dicamba and 2,4-D	Weedmaster, Banvel + 2,4-D, RangeStar, Outlaw	4 lb/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 XRT	2.8 lb/gal
Glyphosate	N-(phosphonomethyl) glycine	Several including Rodeg**, Roundup, Roundup Ultradry, Glyphosate 417	isopropylamine salt, concentration varies depending on the product
Hexazinone	3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4(1H, 3H)-dione	Velpar L, Pronone Power Pellet	2 lb/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 lb/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)amino]carbonyl 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, dicamba and 2,4-D	Cimarron Max	60% (Part A) 3.87 lb/gal (Part B)
Picloram	4-amino-3,5,6-trichloro-2-pyridinecarboxylic acid	Tordon 22K, Triumph 22K, Picloram 22K	2 lb/gal
Picloram:Fluroxypyr (1:1)	See Picloram and Fluroxypyr	Sumount	1.34 lb/gal
Picloram:2,4-D(1:4)	See Picloram and 2,4-D	Grazon P+D, Gunslinger, Picloram + D	2.5 lb/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, Triclopyr R&P	0.75 lb/gal (Pathfinder II--ready to use formulation for stem sprays) 4 lb/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 lb/gal
Triclopyr:2,4-D(1:2)	See Triclopyr and 2,4-D	Crossbow	3 lb/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

Brush 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 treatment*			
Macartney rose (undisturbed stands)	2,4-D amine Pictoram; 2,4-D(1:4)	L 1 gal (4 lb) 4 lb/gal product	L 1% (4 lb/gal product)	5 to 15 gal water as aerial spray; 25 to 30 gal water as ground broadcast. Thoroughly wet foliage and stems for individual plant treatment. Add 32 to 64 oz of surfactant per 100 gal of water.	Spring before June 1, good growth conditions. Spring or fall, good growth conditions.	
		H 1 gal (2.5 lb)	VH 1%			
		H 32 oz (½ lb) Pictoram + 64 oz (2 lb) 2,4-D, 4 lb/gal product	VH ¼ % Pictoram + ½ % 2,4-D (4 lb/gal product)			
	2,4-D low volatile ester	L 96 oz (3 lb) 4 lb/gal product	L 1% (4 lb/gal product)	5 to 15 gal water as aerial spray; 25 to 30 gal water as ground broadcast. Thoroughly wet foliage and stems for individual plant treatment. Add 32 to 64 oz of surfactant per 100 gal of water.	Fall, under good moisture conditions, before Nov. 1.	
Mesquite, huisache, twisted acacia	Diesel fuel oil, kerosene		H	Apply to base of trunk from 12 to 18 in. above soil surface down to soil surface. Apply until solution puddles on soil surface.	Anytime soil is dry and pulled away from the trunk.	Apply sufficient oil to penetrate to plant bud zone. Diesel fuel oil does not evaporate as fast as kerosene.
		Hexazinone liquid	M to H** 4 to 8 ml per 3 ft. of canopy diameter or height, whichever is greater		Late winter through summer.	Apply undiluted Hexazinone liquid or Hexazinone pellets to soil surface between the stem base and the edge of the canopy. Use an exact delivery handgun applicator to apply Hexazinone liquid. If plant size requires more than a single 4 ml application of Hexazinone liquid, or 2 Hexazinone pellets, apply subsequent applications or pellets equally spaced around the plant. Do not use these treatments on marshy or poorly drained sites nor on soils classified as clays. Best results are expected on coarse-textured soils.
	Hexazinone pellet		M to H 2 to 4 pellets per 3 ft. of canopy diameter or height, whichever is greater			
Mesquite (basal stem diameter 1½ in. or less)	Triclopyr		VH 15% in diesel fuel oil or basal bark oil	Apply to lower 12 to 18 in. of trunk to wet the trunk; do not spray to point of runoff. Apply completely around the trunk.	Anytime—optimum time is during growing season when plants have mature leaves.	This is commonly called the low volume basal application method. Use a 5500X1 adjustable cone nozzle. Use only on plants with smooth bark and a trunk diameter less than 4 in.
Mesquite (basal stem diameter greater than 1½ in.), Christ thorn	Triclopyr		VH 25% in diesel fuel oil or basal bark oil			

*See Guide to Quantity of Herbicide Formulation for Total Volume of Spray Mix on page 7 for mixing information.
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Mesquite (basal stem diameter 1½ in. or less)	Triclopyr		VH 15% in diesel fuel oil 10% d/l limonene (a penetrant) may be added to the mixture--see remarks	Apply to the trunk in a 3 to 4-in.-wide band near ground level or at line dividing smooth bark from corky bark. Apply completely around the trunk.	Anytime--optimum time is during growing season when plants have mature leaves.	This is commonly called the streamline basal application method. Use a straight stream nozzle. Use only on plants with smooth bark and a trunk diameter less than 4 in. Addition of a penetrant to the mixture aids with coverage around the trunk. Trade names for d/l limonene are Quick Step II, Cide-Kick, Cide-Kick II and AD 100. Other penetrants may be effective but have not been tested on rangelands in Texas.
Mesquite (basal stem diameter greater than 1½ in.)	Triclopyr		VH 25% in diesel fuel oil 10% d/l limonene (a penetrant) may be added to the mixture--see remarks			
Mesquite (seedlings and saplings)	Triclopyr		VH 5% in diesel fuel oil	Apply to lower 12 to 18 in. of trunk to point of runoff, but not to the point of puddling.	May through August	This is commonly called the low volume basal application method. Use a 5500X1 adjustable cone nozzle.
Mesquite, Christ thorn and other hardwoods (cut stumps)	Triclopyr		VH** 15% in diesel fuel oil or basal bark oil	Spray the sides of the stump and the outer portion of the cut surface, including the cambium, immediately after cutting, to thoroughly wet the stem and root collar area, but not to the point of runoff.	Any season of the year, except when snow or water prevent spraying to the ground line.	This is commonly called the cut stump application method. Apply with a backpack or knapsack sprayer using low pressures and a solid cone or flat fan nozzle. This is an excellent treatment to use after cutting mesquite with hydraulic shears.
	Triclopyr:Fluroxypyr (3:1)		VH 20% in diesel fuel oil or basal bark oil			

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Brush 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 treatment*			
Mesquite (suppression and weed control)	2,4-D amine or low volatile ester Picloram:2,4-D(1:4) Dicamba:2,4-D(1:3) Metsulfuron methyl/Dicamba:2,4-D(1:3) Picloram + 2,4-D amine or low volatile ester	L 32 to 128 oz (2 to 4 lb)	M 2% (4 lb/gal product)	For aerial applications, suggested total spray volume is 4 gal/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 gal/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 32 to 64 oz of surfactant per 100 gal 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 in. reaches 75°F and continues for 45 days thereafter. If treatment is applied prior to optimum soil temperatures, efficacy rates will be lower and multiple applications over a period of years may be necessary to maintain less than 10% canopy cover.	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 form that may be more difficult to control in the future.
		L 32 to 48 oz (0.6 to 0.9 lb)				
		L 32 to 48 oz (1 to 1.5 lb)				
		L Rate 1 to Rate 2				
		L 8 to 12 oz (¼ to ½ lb) Picloram + 32 to 48 oz (1 to 1.5 lb) 2,4-D, 4 lb/gal product				
Mesquite	Dicamba + 2,4-D amine or low volatile ester Triclopyr Dicamba	L 8 to 12 oz (¼ to ½ lb) Dicamba + 24 to 36 oz (¾ to 1 ½ lb) 2,4-D, 4 lb/gal product	M 1%	Apply to base of trunk from groundline to a height of 12 to 18 in. above the soil surface. Apply until solution puddles on soil surface.	Anytime soil is dry and pulled away from trunk.	
		L 16 to 32 oz (0.5 to 1 lb)	M 1%			
		L 16 to 32 oz (0.5 to 1 lb)	M 1%			

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Table 2. Herbicides for Controlling Brush on Rangeland

Brush 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 treatment*				
Mesquite (continued)	Aminopyralid:clopyralid (1:4:6)	H 1.75 pints (0.61 lb)		For aerial applications, suggested total spray volume is 4 gal/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 gal/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 32 to 64 oz of surfactant per 100 gal 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 in. reaches 75°F and continues for 45 days thereafter. When Clopyralid 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°F 1 ft deep, or if new vegetative growth is present due to recent rains.	Use 16 oz/acre Picloram plus 8 oz/acre Triclopyr, 8 oz/acre Dicamba plus 8 oz/acre Triclopyr, 16 oz/acre Picloram plus 8 oz/acre Dicamba, 16 oz/acre Triclopyr and 11 oz/acre Clopyralid only in West Texas. Dicamba and Dicamba mixtures have been more effective in West Texas than in other parts of the state. Use mixtures that include 4 oz/acre Triclopyr and 5 oz/acre Clopyralid 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 8 oz Triclopyr and 11 oz Clopyralid will give better control than mixtures with 4 oz Triclopyr and 5 oz Clopyralid. 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.	
	Clopyralid	M to H 11 to 21 oz (¼ to ½ lb)	VH 1%				
	Triclopyr + Picloram	M 8 to 16 oz (¼ to ½ lb) Triclopyr + 16 to 32 oz (¼ to ½ lb) Picloram	M to H ½% Triclopyr + ½% Picloram				
	Triclopyr + Dicamba	L 8 to 16 oz (¼ to ½ lb) Triclopyr + 8 to 16 oz (¼ to ½ lb) Dicamba	M ½% Triclopyr + ½% Dicamba				
	Triclopyr + Clopyralid	M to H 4 to 16 oz (¼ to ½ lb) Triclopyr + 5 to 11 oz (¼ to ½ lb) Clopyralid	VH ½% Triclopyr + ½% Clopyralid				
	Picloram + Dicamba	M 16 to 32 oz (¼ to ½ lb) Picloram + 8 to 16 oz (¼ to ½ lb) Dicamba	H ½% Picloram + ½% Dicamba				
	Picloram + Clopyralid	M to H 16 to 32 oz (¼ to ½ lb) Picloram + 11 to 21 oz (¼ to ½ lb) Clopyralid	VH ½% Picloram + ½% Clopyralid				
	Triclopyr + Clopyralid + Picloram	M to H** 4 to 8 oz (¼ to ½ lb) Triclopyr + 5 to 11 oz (¼ to ½ lb) Clopyralid + 32 oz (½ lb) Picloram					
							Recommended for mixtures of mesquite and pricklypear cactus.

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