

Herbicides for Conservation Reserve Program (Native Grasses)

Formulated product/acre*	Herbicide and lb active ingredient needed/acre	Comments and limitations
For control of noxious weeds, refer to the Herbicides for Noxious Weeds table.		
GRAIN SORGHUM COVER CROP		
Short-residual herbicides for grain sorghum can be applied as directed on a grain sorghum cover crop.		
PREPLANT AND PREEMERGENCE		
0.1 oz Escort XP	Metsulfuron (2) 0.0038	Controls susceptible broadleaf weeds. Apply preplant or preemergence for some native grasses. See label for species. Do not use on soil with pH above 7.9.
1 to 2 pt of 3 lb ae/gal Glyphosate (see glyphosate table)	Glyphosate (9) 0.38 to 0.75 lb ae	For control of actively growing volunteer grains and annual weeds up to 6 inches tall. Apply in 3 to 10 gal spray/a with NIS. The addition of 2% AMS by weight or 17 lb/100 gal water can increase performance of glyphosate. Use flat-fan nozzles for best results. Dust on plants can reduce performance of glyphosate.
2 to 4 pt Gramoxone SL 2.0	Paraquat (22) 0.5 to 1	A restricted-use pesticide. A contact herbicide. Apply in clean water to annual weeds 1 to 6 inches tall. Use flat-fan nozzles for best results. Always add NIS or COC. Dust on plants can inactivate paraquat.
5.4 to 32 oz Journey	Imazapic (2) + Glyphosate (9)	For annual weed control in new plantings of labeled warm-season grasses and forbs. See label for tolerance of individual species.
2 to 6 oz Plateau	Imazapic (2)	For annual weed control in new plantings of labeled warm-season grasses and forbs.
POSTEMERGENCE FOR SEEDLING GRASSES		
0.5 to 1 pt 4 lb/gal 2,4-D amine	2,4-D (4) 0.25 to 0.5	Controls many broadleaf weeds. Do not use on new seedlings until established (6 or more leaves or tillered). Because buffalo and grama grass seedlings are more susceptible to injury by 2,4-D, do not apply it unless broadleaf weeds provide a canopy over grasses.
0.25 to 1 pt Clarity, Banvel Sterling Blue, or Vision	Dicamba (4) 0.13 to 0.5	Controls annual broadleaf weeds in seedling grasses. Do not apply until seedling grasses exceed the 3-leaf stage of growth. Can be tank-mixed with 2,4-D.
0.1 oz Escort XP + 2 qt surfactant/100 gal	Metsulfuron (2) 0.0038	Controls susceptible broadleaf weeds. Apply to some native grasses after the 3- to 4-leaf stage. See label for species. Apply after weeds have emerged but while they are small and actively growing. Do not use on soil with pH > 7.9.
---	Alternative method: Sickle-bar or rotary mower	Mow grasses to 4 to 6 inches in height after spring seeding and after vegetation is 6 to 8 inches tall. Use of rotary mower in heavy weed growth can cause windrows and smothering of grass seedlings. To avoid this, use sickle-bar mower.
POSTEMERGENCE FOR ESTABLISHED GRASSES		
0.5 to 4 pt of 4 lb/gal 2,4-D amine or LVE	2,4-D (4) 0.25 to 2	Controls many broadleaf weeds. Consider native grasses as “established grasses” in the year following seeding, unless many new seedlings are present. Use label rate to control hard-to-kill annual or perennial weeds.
1 to 2 pt Brox 2EC	Bromoxynil (6) 0.25 to 0.5	Apply in fall or spring after grasses have reached the 2- to 3-leaf stage. Apply to weeds up to the 4-leaf stage or 2 inches in height, whichever comes first. Consult label for mixing and application instructions. See label for tank mix recommendations with MCPA.

* Numbers in parentheses indicate herbicide site of action; see p. 3 for more information. Products often are available in several formulations or brand names, and label information may vary. Refer to the Names, Toxicities, and Persistence table, p. 12.

Herbicides for Conservation Reserve Program (Native Grasses)

Formulated product/acre*	Herbicide and lb active ingredient needed/acre	Comments and limitations
POSTEMERGENCE FOR ESTABLISHED GRASSES		
1 to 3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply to control broadleaf weeds in established grass no earlier than the growing season after planting. Can be tank-mixed with other herbicides.
Rate I and II Cimarron Max	Metsulfuron (2) + Dicamba (4) + 2,4-D amine (4)	Apply for control of broadleaf weeds in established stands (planted previous year or earlier). See label for list of tolerant grasses.
0.125 to 1.25 oz Cimarron Plus	Metsulfuron (2) + Chlorsulfuron (2) 0.004 to 0.038 + 0.001 to 0.012	For broadleaf weed control in stands planted the previous season and fully tillered. Treat when weeds are less than 4 inches tall or in diameter.
0.25 to 2 pt Clarity, Banvel Sterling Blue, or Vision	Dicamba (4) 0.13 to 1	Apply to control susceptible broadleaf weeds in established grasses, that is, the season after planting. Certain grasses, such as smooth brome and buffalograss, can be injured at rates exceeding 1 pt (0.5 lb ai/treated acre). Can be tank-mixed with 2,4-D. A total of 4 pt (2 lb ai/acre) per year can be applied if retreatment is necessary.
1 qt to 1.5 gal Crossbow	2,4-D (4) + Triclopyr (4) 0.5 + 0.25 to 3 + 1.5	Apply to control susceptible broadleaf weeds in established grasses, that is, the season after planting. Certain grasses, such as smooth brome and buffalograss, can be injured at the high rates. Higher rates are for control of deep-rooted perennial and susceptible woody species.
12 to 64 fl oz Facet L	Quinclorac (4) 0.14 to 0.75	Apply to established stands of cool- and warm-season grasses or control grasses and broadleaf weeds. Consult label for additives and tank-mixing partners.
1 to 4 pt Grazon P+D 0.75 to 2.67 pt Graslan L	Picloram (4) + 2,4-D (4) 0.068 + 0.25 to 0.27 + 1	A restricted-use pesticide. For season-long control of annual and perennial broadleaf weeds. Apply after perennial grasses are well established (have developed a good secondary root system and show good vigor).
1.2 to 2.1 pt GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply to control broadleaf weeds in established grass stands no earlier than the growing season after planting. Can be tank-mixed with other herbicides.
3 to 7 fl oz Milestone	Aminopyralid (4) 0.047 to 0.109	Apply to control broadleaf weeds in established grass stands. During the season of establishment application should be postponed until plants have developed a secondary root system and have begun to show good vigor. This is generally associated with the appearance of two true leaves, which can occur 45-60 days after application under good growing conditions.
1.33 to 2 oz Outrider	Sulfosulfuron (2)	Apply after native perennial grasses have reached the 3-leaf stage for grass and broadleaf weeds listed on the label. Apply Outrider with a 0.25% v/v non-ionic surfactant.
2 to 8 oz Overdrive	Dicamba (4) + Diflufenzopyr (19)	Controls a wide range of broadleaf weeds. Addition of NIS or MSO is needed to achieve consistent weed control. Can be tank-mixed with other CRP-labeled herbicides to enhance control. Overdrive may injure buffalograss.
0.75 to 1.5 pt PastureGard HL	Triclopyr (4) + Fluroxypyr (4) 0.28 + 0.09 to 0.56 + 0.19	Apply to control broadleaf weeds in established grass stands. For sericea control, apply at 0.75 pt/a once plants are 12-15 inches tall. Increase rate to 1.5 pt/a for dense stands or later stages of growth. For spot application of sericea, mix 0.5 fl oz of PastureGard HL per gallon of water.
2 to 12 oz Plateau	Imazapic (2) 0.031 to 0.188	Controls most annual grasses and broadleaf weeds. Apply to small, actively growing weeds before they reach size limits listed on the label. Apply with NIS, COC, or fertilizer/surfactant blend.

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Herbicides for Conservation Reserve Program (Native Grasses)

Formulated product/acre*	Herbicide and lb active ingredient needed/acre	Comments and limitations
POSTEMERGENCE FOR ESTABLISHED GRASSES		
1 to 4 pt Range Star, Weed-Master or Saddle-Up 0.5 to 5 pt Outlaw 0.33 to 4 pt Latigo	Dicamba (4) + 2,4-D (4)	Apply when weeds are actively growing. Injury may occur to seeded grasses with fewer than 6 leaves or before grasses are well established. Do not apply to buffalograss.
2 to 5 oz Rave	Triasulfuron (2) + Dicamba (4) 0.011 + 0.069 to 0.028 + 0.172	Controls many broadleaf weeds. Apply to actively growing weeds at least 60 days after emergence of seedlings in early spring. Can be tank-mixed with 2,4-D, Grazon P+D, Tordon 22K, and others. See label for list of tolerant grasses.
1 to 3 pt Remedy Ultra	Triclopyr (4) 0.50 to 1.5	Apply to control broadleaf weeds in established grass stands. For sericea control, apply at 1 to 2 pt/a once plants have reached 8 in. in height. May be used in a mixture with diesel, kerosene, or basal oil as a low-volume basal treatment for trees. Basal mixture: 25% Remedy Ultra + 75% oil.
Tordon 22K See label for specific rates.	Picloram (4)	A restricted-use pesticide. Primarily for noxious weed control. Controls susceptible annual and perennial broadleaf weeds in established grasses. Can be tank-mixed with 2,4-D. Apply only after established grasses have a good secondary root system and are growing actively. Can be applied as a spot treatment.
4 to 8 oz Yukon	Halosulfuron (2) + Dicamba (4)	Apply after weed emergence to small, actively growing broadleaves. Can be tank-mixed with 2,4-D, Clarity, and Tordon 22K.

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Herbicides for Bermudagrass

Formulated product/acre*	Herbicide and lb active ingredient needed/acre	Comments and limitations
BROADLEAF WEEDS-POSTEMERGENCE		
0.5 to 2 qt of 4 lb/gal 2,4-D amine, LVE, or mixed formulations	2,4-D (4) 0.5 to 2	Apply when the problem weed is in the prebud growth stage and growing actively. Use 20 gal or more of solution per acre for ground application. Repeat applications may be necessary. Do not let dairy animals graze on treated areas within 7 days after treatment.
1 qt of 4 lb/gal 2,4-D + 0.25 qt Clarity	2,4-D (4) + Dicamba (4) 1 + 0.25	Same as the previous 2,4-D entry. Follow directions, precautions, and grazing limitations on product label.
1 to 3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply to control broadleaf weeds in established grass stands. Grasses need to be established at least 4 months before the application of Chaparral. See label for tall fescue and smooth brome grass precautions.
Rates I, II, and III Cimarron Max	Metsulfuron (2) + Dicamba (4) + 2,4-D (4)	Same as for Metsulfuron (see below).
0.125 to 1.25 oz Cimarron Plus	Metsulfuron (2) + Chlorsulfuron (2) 0.004 to 0.038 + 0.001 to 0.012	Same as for Metsulfuron (see below).
0.25 to 1 qt Clarity	Dicamba (4) 0.25 to 1	Apply when the problem weed is in the prebud growth stage and growing actively. Use 20 gal or more of solution per acre for ground application. Repeat applications may be necessary, but do not exceed 1 qt/a during a growing season. Depending on rate, do not let dairy animals graze on treated areas for 7 to 40 days after treatment. Follow directions, precautions, and grazing limitations on product label.
Grazon P+D (see label for notes)	Picloram (4)/2,4-D (4)	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
1.2 to 2.1 pt GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply to control broadleaf weeds in established grass stands. During the season of establishment, application should be postponed until plants have developed a secondary root system and have begun to show good vigor. This is generally associated with the appearance of two true leaves, which can occur 45-60 days after application under good growing conditions.
0.1 to 1 oz Metsulfuron*	Metsulfuron (2) 0.0038 to 0.038	Apply when weeds are less than 4 inches tall or in diameter. Can be tank-mixed with Clarity, Grazon P+D, 2,4-D, Tordon 22K, or WeedMaster. Include NIS at 0.25 to 0.5% v/v.
3 to 7 fl oz Milestone	Aminopyralid (4) 0.047 to 0.109	Apply to control broadleaf weeds in established grass stands no earlier than the growing season after planting. Can be tank-mixed with other herbicides.
0.75 to 2 pt PastureGard HL	Triclopyr (4) + Fluroxypyr (4) 0.28 + 0.09 to 0.75 + 0.25	Apply to control broadleaf weeds in established grass stands. For sericea control, apply at 0.75 to 1 pt/a once plants have reached 8 in. in height. Treated areas may be rotated to crops 120 days after PastureGard HL application.
2 to 4 pt Range Star 1.75 to 3.5 pt Outlaw 1 to 2 pt Latigo	Dicamba (4) + 2,4-D (4)	Apply at the germinating stage of weeds. Control will be reduced if weeds are greater than 1 inch in height. See label for grazing and haying restrictions.

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Herbicides for Bermudagrass

Formulated product/acre*	Herbicide and lb active ingredient needed/acre	Comments and limitations
BROADLEAF WEEDS-POSTEMERGENCE		
2 to 5 oz Rave	Triasulfuron (2) + Dicamba (4) 0.011 + 0.069 to 0.028 + 0.172	Controls many broadleaf weeds. Apply to actively growing weeds in early spring. Can be tank-mixed with 2,4-D, Grazon P+D, Tordon 22K, and others. See label for list of tolerant grasses.
1 to 3 pt Remedy Ultra	Triclopyr (4) 0.50 to 1.5	Apply to control broadleaf weeds in established grass stands. For sericea control, apply at 1 to 2 pt/a once plants have reached 8 in. in height. May be used in a mixture with diesel, kerosene, or basal oil as a low-volume basal treatment for trees. Basal mixture: 25% Remedy Ultra + 75% oil.
1 fl oz Sharpen	Saflufenacil (14) 0.022	Dormant season application requires MSO at 1% v/v and AMS at 17 lb/gal. Use only MSO and do not use AMS for in-season applications.
Up to 2 qt Tordon 22K	Picloram (4) up to 1	A restricted-use pesticide. Primarily for noxious weed control. Controls susceptible annual and perennial broadleaf weeds in established grasses. Can be tank-mixed with 2,4-D. Apply only after established bermudagrass has a good secondary root system and is growing actively. Can be applied as a spot treatment. See label for rates, directions, and precautions.
GRASS AND BROADLEAF WEEDS-PREEMERGENCE		
1.1 to 4.2 qt Prowl H₂O, Satellite Hydrocap	Pendimethalin (3) 1 to 4	Apply before target weed germination in the dormant season, in the early spring before Bermudagrass green up, or in-season between cuttings. Controls most annual grasses and some broadleaf weeds.
GRASS AND BROADLEAF WEEDS-POSTEMERGENCE		
1.33 oz Outrider	Sulfosulfuron (2) 0.062	Controls or suppresses certain annual and perennial grasses and broadleaf weeds. For best control of johnsongrass, apply to actively growing plants at least 18 to 24 inches tall, up to the head stage of growth. Add 0.25% NIS.
1 to 1.5 oz Pastora	Nicosulfuron (2) + Metsulfuron (2) 0.035 to 0.053 + 0.009 to 0.014	Controls or suppresses grass and broadleaf weeds in bermudagrass pasture. For best results, apply to young actively growing weeds. Applications may result in temporary yellowing and/or stunting of bermudagrass. Grass response is minimized by treating when bermudagrass has less than 2 inches of new growth during initial green-up or by treating within 7 days after cutting for hay. Do not apply more than 2.5 oz/a per year. Include NIS at 0.25 to 0.5% v/v or COC at 1 to 2% v/v plus an ammonium nitrogen fertilizer, such as AMS at 2 to 4 lb/acre. Can be tank-mixed with other herbicides.
1.25 to 1.6 oz Purestand Max	Sulfosulfuron (2) + metsulfuron (2) 0.047 to 0.06 + 0.012 to 0.015	Controls or suppresses certain grass and broadleaf weeds in bermudagrass pasture. For best control of johnsongrass, apply when plants are 18 to 24 in. tall up to head stage. Also controls or suppresses biennial thistles, lespedeza, and nutsedge.

* Numbers in parentheses indicate herbicide site of action; see p. 3 for more information. Products often are available in several formulations or brand names, and label information may vary. Refer to the Names, Toxicities, and Persistence table, p. 12.

Weed and Brush Control Practices for Pasture and Rangeland

Chemical and mechanical practices are available for control of weeds and brush. Identify the problem plant and select the effective control practice(s).

Common names	Life cycle	Season	Mechanical	Burning	Herbicides
TAME PASTURES					
Broadleaf weeds					
Bull thistle	A,B	W	—	—	F
Cocklebur	A	W	M	—	F
Common ragweed	A	W	M	—	F
Common sunflower	A	W	M	—	F
Hemp Dogbane	P	W	—	—	F
Musk thistle (nodding thistle)	A,B	C	M-R	—	F**
Tall thistle	A,B	W	M	—	F
Wavyleaf thistle	P	W	M	—	F
Western ragweed	P	W	M	—	F-R
Brush					
Eastern red cedar	P	E	C	CN	F,S
Buckbrush (coralberry)	P	W	M-R	—	F-R
Honey locust	P	W	CU	—	F,S,B
Multiflora rose	P	W	—	—	F,S
Osage orange (hedge)	P	W	CU	—	F,S,B
RANGELAND					
Broadleaf weeds					
Annual broomweed	A	W	—	—	F
Broom snakeweed	P	W	—	—	F
Bull thistle	A,B	W	—	—	F
Cocklebur	A	W	M	CN	F
Common mullein	B	W	—	—	F
Common ragweed	A	W	M	—	F
Common sunflower	A	W	M	—	F
Goldenrods	P	W	—	R-A	F
Hoary vervain	P	W	—	—	F
Lanceleaf ragweed	A	W	M	—	F
Musk thistle (nodding thistle)	A,B	C	M-R	—	F**
Poison and water hemlock	B,P	W	—	—	F
Tall thistle	A,B	W	M	—	F
Sericea lespedeza	P	W	M-R	IP	F**
Wavyleaf thistle	P	W	—	—	F
Western ironweed (Baldwin ironweed)	P	W	—	R-A	F-R
Western ragweed	P	W	—	R-A	F-R

Common names

Grasses

Common names	Life cycle	Season	Mechanical	Burning	Herbicides
Cheatgrass	A	C	M	CN	F
Downy brome	A	C	M	CN	F
Japanese brome	A	C	M	CN	F
Little barley	A	C	M	CN	F
Sandbur	A	W	—	—	F
Brush					
Ash	P	W	CU	M-A	F,B
Blackberry	P	W	—	M-A	F-R
Blackjack oak	P	W	CU	CN-A	F,S,B
Buckbrush (coralberry)	P	W	M-R	CN-A	F-R,S
Cottonwood	P	W	CU	—	F,S,B
Eastern persimmon	P	W	CU	—	F,R,S
Eastern red cedar	P	E	C	CN	F,S
Honey locust	P	W	CU	R-A	F,S,B
Indigo bush	P	W	—	M-A	F
Multiflora rose	P	W	—	M-A	F,S
Osage orange (hedge)	P	W	CU	R-A	F,S,B
Poison ivy	P	W	—	—	F
Post oak	P	W	CU	CN-A	F,S,B
Pricklypear cactus	P	W	—	R-A	F
Raspberry	P	W	—	—	F-R
Rough-leaved dogwood	P	W	—	M-A	S,F-R
Russian olive	P	W	CU	R-A	S,F,B
Sand plum	P	W	—	R,CN-A	F
Sand sagebrush (sandhill sage)	P	W	—	R	F
Siberian elm	P	W	CU	R	F,S,B
Smooth sumac	P	W	M-R	IP	F,S
Tamarisk (saltcedar)	P	W	CU	IP	F
Willow	P	W	CU	—	F,S,B
Yucca (small soapweed)	P	W	—	M	S,F-R

Life cycle

A = Annual
P = Perennial
B = Biennial

Season

C = Cool season
E = Evergreen
W = Warm season

Mechanical

CU = Cut and treat cut surface
M = Mow
C = Cut below green growth
R = Repeat treatments needed
— = No recommendation

Burning

- A = with 2 or more yearly treatments
CN = Controls
IP = Increases population
M = Maintains population
R = Reduces population
— = No recommendation

Herbicides

- R = Repeat treatments needed
F = Foliar treatment
B = Basal bark treatment
S = Soil treatment
** = Refer to Herbicides for Noxious Weeds table
— = No recommendation

Grazing Restrictions for Certain Range and Pasture Herbicides¹

Herbicide	Beef and non-lactating animals			Lactating dairy animals	
	Before grazing	Before hay harvest	Removal before slaughter	Before grazing	Before hay harvest
2,4-D	0	7 to 30 days	3 days	7 days	30 days
Arsenal	0	7 days	0	0	7 days
Chaparral	0	14 days	0	0	17 days
Cimarron Max	0	37 days	30 days	7 days	37 days
Cimarron Plus	0	0	0	0	0
Crossbow	0	14 days	3 days	Next growing season	14 days
Dicamba ²	0	7 days	30 days	7 to 40 days	37 to 70 days
DuraCor	0	14 days	0	0	17 days
Escort XP	0	0	0	0	0
Glyphosate	Check label. Restrictions vary by product, rate, and method of application.				
GrazonNext HL	0	14 days	0	0	17 days
Grazon P+D/Graslan L	0	30 days	3 days	7 days	30 days
Journey	0	7 days	0	0	7 days
Milestone	0	0	0	0	0
Overdrive	0	0	0	0	0
Pastora	0	0	0	0	0
PastureGard HL	0	14 days	3 days	0	14 days
PathFinder II	0	7 to 14 days	3 days	0	14 days
Plateau	0	7 days	0	0	7 days
Pronone Power Pellets	0	0	0	0	0
Prowl H ₂ O	0	0	0	0	0
Rave	0	7 days	30 days	7 days	0
Remedy Ultra	0	14 days	3 days	0	14 days
Sharpen	0	0	0	0	0
Spike 20P	0	1 year	0	0	1 year
Surmount	0	7 days	3 days	14 days	14 days
Tordon 22K	0	0 to 14 days	3 days	14 days	0 to 14 days
Velpar L, ³ Velossa ³	0	0	0	0	0
Vista XRT	0	7 days	2 days	0	7 days
WeedMaster/Range Star	0	7 days	3 days	7 days	7 days
Yukon	0	37 days	0	0	37 days

¹ Check individual product labels for restrictions.

² Dicamba is the active ingredient in Banvel, Clarity, Sterling Blue, and Vision. Restrictions vary with rate and product.

³ No restrictions for grazing or hay when applied as a basal soil treatment.

Herbicides for Cool-Season Pastures

Weeds and brush	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
ANNUAL AND BIENNIAL WEEDS			
Ragweed Sunflower Thistle	1 to 2 qt of 4 lb/gal 2,4-D amine or LVE	2,4-D* amine (4), LVE, or mixed formula- tions 1 to 2 lb	Apply when the problem weed is in the early leaf stage and growing actively. Use 20 gal or more of solution per acre for ground application. Repeat applications may be necessary. Do not apply when grass is in early boot to milk stages if grass seed production is desired. Do not let dairy animals graze on treated areas within 7 days after treatment.
	1 to 3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply to control broadleaf weeds in established grass stands. Grasses need to be established at least 4 months before the application of Chaparral. See label for tall fescue and smooth bromegrass precautions.
	Cimarron Max	Metsulfuron (2) +2,4-D amine (4) + Dicamba (4)	See label for rates, directions, restrictions, and cautions.
	0.125 to 1.25 oz Cimarron Plus	Metsulfuron (2) + Chlorsulfuron (2)	Use maximum of 0.5 oz/a on fescue. Do not use on timothy, Garrison creeping foxtail, or ryegrass.
	12 to 20 fl oz/a DuraCor	Aminopyralid (4) + Rinskor (4)	Apply to control broadleaf weeds in established grass stands. During establishment application should be postponed until plants have developed a secondary root system and have begun to show good vigor. This is generally associated with the development of three true leaves, which can occur 45 to 60 days after application appearance under good growing conditions.
	Grazon P+D (see label for rates)	Picloram (4)/ 2,4-D (4)	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
	1.2 to 2.1 pt GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply to control broadleaf weeds in established grass stands. During the season of establishment, application should be postponed until plants have developed a secondary root system and have begun to show good vigor. This is generally associated with the appearance of two true leaves, which can occur 45 to 60 days after application under good growing conditions.
	0.1 to 1 oz Metsulfuron	Metsulfuron (2)	Use maximum of 0.4 oz/a on fescue and timothy. Use NIS at 2 pt/100 gal. Escort XP may stunt or cause seedhead suppression of tall fescue.
	3 to 7 fl oz Milestone	Aminopyralid (4)	Apply to control broadleaf weeds. Can be tank-mixed with other herbicides.
	2 to 8 oz Overdrive	Dicamba (4) + Diflufenzopyr (19)	Controls a wide range of broadleaf weeds. Addition of NIS or MSO is needed to achieve consistent weed control. Can be tank-mixed with other herbicides to enhance control.
	1.1 to 4.2 qt Prowl H₂O, Satellite Hydrocap	Pendimethalin (3)	Apply before target weed germination in the fall, after the last cutting/mowing/grazing, in winter, in spring or in-season between cuttings. Apply only to established cool-season grasses with 6 or more tillers per plant. Controls most annual grasses and some broadleaf weeds.
	2 to 4 pt Range Star or WeedMaster 0.5 to 3.5 pt Outlaw 0.33 to 2.5 pt Latigo	Dicamba (4) + 2,4-D (4)	See label for weed-specific rates and grazing restrictions. Legumes interseeded with cool-season grasses will likely be injured.
	0.25 to 0.5 pt Tordon 22K	Picloram (4) 0.063 to 0.125 lb	A restricted-use pesticide. Apply before bud stage when plant is growing actively. Follow directions, grazing limitations, and precautions on label.

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Herbicides for Cool-Season Pastures

Weeds and brush	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
ANNUAL AND BIENNIAL WEEDS			
Foxtail species	4 pt Prowl H₂O	Pendimethalin (3)	Apply in spring before foxtail emerges. Apply only to smooth brome with 6 or more tillers per plant. No haying or grazing restrictions. May cause temporary injury to smooth brome if applied during cold weather or drought.
Most annual weeds	1 to 3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply to control broadleaf weeds in established grass stands. Grasses need to be established at least 4 months before the application of Chaparral. See label for tall fescue and smooth brome grass precautions.
	1.1 to 2.1 pt GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply to control broadleaf weeds in established grass stands. During the season of establishment, application should be postponed until plants have developed a secondary root system and have begun to show good vigor. This is generally associated with the appearance of two true leaves, which can occur 45 to 60 days after application under good growing conditions.
	0.75 to 1.5 pt PastureGard HL	Triclopyr (4) + Fluroxypyr (4)	Apply to control broadleaf weeds in established grass stands. For sericea control, apply at 0.75 pt/a once plants are 12-15 inches tall. Increase rate to 1.5 pt/a for dense stands or later stages of growth. For spot application of sericea, mix 0.5 fl oz of PastureGard HL per gallon of water. Treated areas may be rotated to crops 120 days after PastureGard HL application.
	Rave (see label for rates)	Triasulfuron (2) + Dicamba (4)	Controls many broadleaf weeds. Apply to actively growing weeds in early spring. See label for tank mix instructions and list of tolerant grasses.
	1 to 2 fl oz Sharpen	Saflufenacil (14)	Apply postemergence in-season for broadleaf weed control. Use 1% MSO. Sharpen may be applied preplant, preplant incorporated, or preemergence in the fall or spring when establishing cool-season grasses. Verify grass selectivity to Sharpen to help avoid potential injury.
	4 to 8 oz Yukon	Halosulfuron (2) + Dicamba (4)	Apply after weed emergence to small, actively growing broadleaves. Can be tank-mixed with 2,4-D, Clarity, and Tordon 22K.
PERENNIAL WEEDS			
Asters Western ironweed Western ragweed	1 to 2 qt of 4 lb/gal 2,4-D amine or LVE	2,4-D* amine, LVE, or mixed formulations (4) 1 to 2 lb	Apply when the problem weed is in the early leaf stage and actively growing. Use 20 gal or more of solution per acre for ground application. Do not apply when grass is in early boot to milk stages if grass seed production is desired. Do not let dairy animals graze on treated areas within 7 days after treatment.
	1 qt of 4 lb 2,4-D + 0.5 pt Clarity , Banvel , or Vision	2,4-D* amine (4) + Dicamba (4) 1 lb + 0.25 lb	Dicamba can injure cool-season grasses. Follow directions, grazing limitations, and precautions on Clarity label.
	1 to 3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply to control broadleaf weeds in established grass stands. Grasses need to be established at least 4 months before the application of Chaparral. See label for tall fescue and smooth brome grass precautions.
	Cimarron Max	Metsulfuron (2) + 2,4-D amine (4) + Dicamba (4)	See label for rates, directions, restrictions, and cautions.
	1.1 to 2.1 pt GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply to control broadleaf weeds in established grass stands. During the season of establishment, application should be postponed until plants have developed a secondary root system and have begun to show good vigor. This is generally associated with the appearance of two true leaves, which can occur 45 to 60 days after application under good growing conditions.

* Numbers in parentheses indicate herbicide site of action; see p. 3 for more information. Products often are available in several formulations or brand names, and label information may vary. Refer to the Names, Toxicities, and Persistence table, p. 12.

Herbicides for Cool-Season Pastures

Weeds and brush	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
PERENNIAL WEEDS			
Asters Western ironweed Western ragweed	Grazon P+D (see label for rates)	Picloram (4) + 2,4-D (4)	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
	1 to 2 pt Tordon 22K	Picloram (4) 0.25 to 0.5 lb	A restricted-use pesticide. Apply before bud stage when plant is actively growing. Follow directions, grazing limitations, and precautions on label.
	1 to 4 pt WeedMaster or Range Star , 0.5 to 3.5 pt Outlaw , or 0.33 to 2.5 pt Latigo	2,4-D* amine (4) + Dicamba (4) 1 lb + 0.25 lb	See label for rates, directions, and species controlled. Do not graze lactating dairy animals within 7 days of treatment. Do not harvest treated grasses for hay within 37 days of treatment. Suppression only.
Hemp Dogbane	1 to 1.5 pt PastureGard HL	Triclopyr (4) + Fluroxypyr (4)	Established grasses are tolerant. Apply to small actively growing plants before the bud stage. Legumes may be severely injured but may be replanted after 1 month. There is a 14-day waiting period prior to hay harvest.
	6 to 12 fl oz Vista XRT	Fluroxypyr (4)	Established grasses are tolerant. Apply when hemp dogbane is actively growing prior to the bud stage. There are no grazing restrictions, but a 7-day waiting period prior to hay harvest. Vista XRT may injure or kill legumes.
Most perennial weeds	3 to 7 fl oz Milestone	Aminopyralid (4)	Apply to control broadleaf weeds. Can be tank-mixed with other herbicides.
	4 to 8 oz Overdrive	Dicamba (4) + Diflufenzopyr (19)	Addition of NIS or MSO is needed to achieve consistent weed control. Lower rate should be tank-mixed with other herbicides to enhance control.
	Rave (see label for rates)	Triasulfuron (2) + Dicamba (4)	Controls many broadleaf weeds. Apply to actively growing weeds in early spring. See label for tank mix instructions and list of tolerant grasses.
	4 to 8 oz Yukon	Halosulfuron (2) + Dicamba (4)	Apply after weed emergence to small, actively growing broadleaves. Can be tank-mixed with 2,4-D, Clarity, and Tordon22K.
Summer and winter annual grasses and many broadleaves	4 to 8 oz Plateau	Imazapic (2) 0.063 to 0.125 lb	Apply in spring after 100% greenup of smooth brome grass, Kentucky bluegrass, and wheatgrass. See label for precautions and use of adjuvants.
WOODY PLANTS			
Multiflora rose	3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply when leaves have fully expanded in late spring. Application can occur throughout the year as long as leaves are healthy and green. Use a minimum of 15 gal/a of solution to ensure good coverage of the entire plant. See label for tall fescue and smooth brome grass precautions.
	16 fl oz + 16 fl oz DuraCor + Remedy Ultra	Aminopyralid (4) + Rinskor (4)/ Triclopyr (4)	Apply when leaves have fully expanded in late spring. Application can occur throughout the year as long as leaves are healthy and green. Use a minimum of 15 gal/a of solution to ensure good coverage of the entire plant.
	0.5 to 1 oz Escort XP	Metsulfuron (2) 0.3 to 0.6 oz	Apply in the spring, shortly after full-leaf stage. Complete coverage is necessary for effective control. Application to tall fescue may reduce production or cause chlorosis.
	Glyphosate	Glyphosate (9) 1% solution	Apply as spot treatment with hand equipment before leaves lose green color. Damage can occur in surrounding vegetation.

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Herbicides for Cool-Season Pastures

Weeds and brush	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
WOODY PLANTS			
Multiflora rose	1.5 pt GrazonNext HL + 1 to 2 pt Remedy Ultra or 3 pt Trycera	Aminopyralid (4)/ 2,4-D (4) + Triclopyr (4)	Apply when leaves have fully expanded in late spring. Application can occur throughout the year as long as leaves are healthy and green. Use a minimum of 15 gal/a of solution to ensure good coverage of the entire plant.
	2 qt Grazon P+D + 1 pt Remedy Ultra or 1.5 pt Trycera	Picloram (4)/2,4-D (4) + Triclopyr (4)	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
Buckbrush	1 to 2 qt of 4 lb/gal 2,4-D* amine or LVE	2,4-D* amine, LVE, or mixed formulations (4) 1 to 2 lb	Apply to foliage in spring when brush is nearing full-leaf stage (normally about May 1 to May 15) and growing actively. Do not let dairy animals graze on treated areas within 7 days after treatment.
	3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply when leaves have fully expanded in late spring. Application can occur throughout the year as long as leaves are healthy and green. Use a minimum of 15 gal/a of solution to ensure good coverage of the entire plant. See label for tall fescue and smooth brome grass precautions.
Eastern red cedar	1 to 2 oz Escort XP to 100 gal water	Metsulfuron (2)	Use high volume application. Spray to wet during period of active growth.
	Tordon 22K 3 to 4 mL of product/ 3 feet of plant height	Picloram (4)	A restricted-use product. Apply on upslope side of plant during April and May or September and October with exact delivery hand-gun applicator. Rainfall is needed for activation. Surrounding vegetation can be damaged.
Eastern red cedar Honey locust Multiflora rose Osage orange	Velpar L 2 to 4 mL of product/ inch stem diameter or Velossa 1.6 to 3.2 mL of product/inch stem diameter	Hexazinone (5)	Apply before or during period of active growth with exact delivery hand-gun applicator. Rainfall is needed for activation. Surrounding vegetation can be damaged. See label for additional instructions.
Honey locust Multiflora rose Osage orange	3.3 oz Chaparral or 3 oz Chaparral + 1 qt 2,4-D	Aminopyralid (4) + Metsulfuron (2)	Apply when plants have reached 6 to 8 in. of new growth. Chaparral may be applied later in the growing season than 2,4-D (mid to late June). See label for tall fescue and smooth brome grass precautions.
	2.5 oz Chaparral + 1 pt Remedy Ultra or 1.5 pt Trycera	Aminopyralid (4)/ Metsulfuron (2) + Triclopyr (4)	Apply once leaves have fully expanded in late spring. Applications can be made into mid-September as long as leaves are healthy and green. See label for tall fescue and smooth brome grass precautions.
	16 fl oz + 16 fl oz DuraCor + Remedy Ultra	Aminopyralid (4) + Rinskor (4)/ triclopyr (4)	Apply once leaves have fully expanded in late spring. Applications can be made into mid-September as long as leaves are healthy and green.
	1.5 pt GrazonNext HL + 1 to 2 pt Remedy Ultra or 1.5 to 3 pt Trycera	Aminopyralid (4)/ 2,4-D (4) + Triclopyr (4)	Apply once leaves have fully expanded in late spring. Applications can be made into mid-September as long as leaves are healthy and green.

* Numbers in parentheses indicate herbicide site of action; see p. 3 for more information. Products often are available in several formulations or brand names, and label information may vary. Refer to the Names, Toxicities, and Persistence table, p. 12.

Herbicides for Cool-Season Pastures

Weeds and brush	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
WOODY PLANTS			
Many woody plants and broadleaf weeds	2 to 3 qt 2,4-D + 2 to 4 pt Remedy Ultra or 3 to 5.3 pt Trycera	2,4-D* (4) + Triclopyr (4)	Foliar applications should be made when woody plants and weeds are actively growing.
	2 qt Grazon P+D + 1 pt Remedy Ultra or 1.5 pt Trycera	Picloram (4)/2,4-D (4) + Triclopyr (4)	Grazon P+D is a restricted-use pesticide. For control of many woody plants on rangeland, pasture, and noncropland. Apply to foliage and green stems when woody plants are growing actively.
	0.75 to 4 pt PastureGard HL	Triclopyr (4) + Fluroxypyr (4)	Foliar applications should be made when woody plants and weeds are actively growing.
	1.5 to 6 pt Surmount	Picloram (4) + Fluroxypyr (4)	A restricted-use pesticide. Foliar applications should be made when woody plants are actively growing.
FESCUE PASTURE RENOVATION			
Seedling fescue	12 to 16 fl oz DuraCor	Aminopyralid (4) + Rinskor (4)	Application should be postponed until plants have developed a secondary root system and have begun to show good vigor. This is generally associated with three true leaves, which can occur after 45 to 60 days under good growing conditions.
	0.4 qt of 3 lb ae/gal Glyphosate	Glyphosate (9) 0.3 lb ae	In the spring after fall application, apply to seedlings that are 4 inches or less in height.
Established fescue	1 qt of 3 lb ae/gal Glyphosate (see glyphosate table)	Glyphosate (9) 0.75 lb ae	In fall, apply to actively growing plants when most are 4 to 12 inches tall. If tall fescue has been mowed or grazed before application, do not treat until new growth has occurred. Remove livestock before application. Do not allow grazing or harvest for 8 weeks after application.
	1 to 2 pt Gramoxone SL 2.0 or 0.7 to 1.3 pt Gramoxone SL 3.0	Paraquat (22) 0.25 to 0.5 lb	May only be handled or applied by certified individuals. Apply to fescue when actively growing and no more than 4 inches tall. Apply a second time at the same rate 10 to 21 days after the first treatment.
	24 to 32 oz Journey	Imazapic (2) + Glyphosate (9)	For control of tall fescue and conversion to warm-season grasses.
	8 to 12 oz Plateau	Imazapic (2)	For control of tall fescue and conversion to warm-season grasses.
Many woody plants	PastureGard HL 25% in diesel oil or kerosene	Triclopyr (4) + Fluroxypyr (4)	Apply to susceptible woody plants less than 6 inches in diameter at any time, except when snow or water prevent spraying to the ground line. Thoroughly wet the lower 12 to 15 inches of stems.
	Pathfinder II	Triclopyr (4)	A ready-to-use product. No mixing required. Use on susceptible woody plants with less than 6-inch basal diameter. Spray basal parts of brush and trees to thoroughly wet lower 12 to 15 inches of stems. Apply at any time, except when snow or water prevent spraying to the ground line.

* Numbers in parentheses indicate herbicide site of action; see p. 3 for more information. Products often are available in several formulations or brand names, and label information may vary. Refer to the Names, Toxicities, and Persistence table, p. 12.

Herbicides for Cool-Season Pastures

Weeds and brush	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
BASAL BARK APPLICATION			
Many woody plants	Remedy Ultra or Trycera 25% in diesel oil or kerosene	Triclopyr (4)	Controls woody plants, such as cottonwood, elm, locust, oaks, and osage orange (hedge). Spray basal parts of brush or trees to a height of 15 to 20 inches above ground. Thoroughly wet all basal bark areas, including crown buds and ground sprouts. Best root control is obtained when application is made from mid-July to mid-January. Periods of dry weather also will aid in root control.
Black locust and honeylocust	Milestone 1 to 5% in basal diluent	Aminopyralid (4)	Apply to stems less than 6 inches in diameter at any time, except when snow or water prevent spraying to the ground line. Spray basal trunks to a height of 12 to 15 inches.
CUT STUMP			
Black locust and honeylocust	Milestone 10% in water	Aminopyralid (4)	Spray cut surfaces as soon as possible after cutting. Cambium next to bark is most vital area to wet.
	Tordon 22K 10% in water	Picloram (4)	Spray cut surfaces within 15 minutes of cutting stem. Cambium next to bark is most vital area to treat.

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Herbicides for Rangeland Weeds

Weeds	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
For control of noxious weeds, refer to Herbicides for Noxious Weeds table.			
ANNUAL AND BIENNIAL WEEDS			
Annual broomweed Cocklebur Common ragweed Sunflower Thistles		2,4-D* amine, LVE, or mixed formulations (4) 1 to 2 lb	Apply when problem weed has leaves and is growing actively. Do not let dairy animals graze on treated area within 7 days after treatment. Do not cut for hay for 30 days. Use 20 gal or more of solution per acre for ground application. Repeat applications may be necessary.
	Cimarron Max	Metsulfuron (2) + 2,4-D amine (4) + Dicamba (4)	See label for rates, directions, restrictions, and cautions.
	0.125 to 1.25 oz Cimarron Plus	Metsulfuron (2) + Chlorsulfuron (2)	Apply when weeds are less than 4 inches tall or in diameter. Do not apply more than 0.625 oz/a to buffalograss. See label for tank mix and surfactant recommendations.
	12 to 16 fl oz DuraCor	Aminopyralid 0.625 to 0.84 lb + Florpyrauxifen 0.006 to 0.008 lb	Apply when weeds are actively growing but prior to flowering. Avoid application in high stress environments such as excessive drought.
	Grazon P+D (see label for rates)	Picloram (4) + 2,4-D (4)	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
	1.2 to 2.1 pt GrazonNext HL	Aminopyralid (4) +2,4-D (4)	Apply when broadleaf weeds are actively growing.
	0.1 to 1 oz Metsulfuron	Metsulfuron (2)	Apply when weeds are less than 4 inches tall or in diameter. Can be tank-mixed with Clarity, Grazon P+D, 2,4-D, Tordon 22K, or WeedMaster. Include NIS at 0.25 to 0.5% v/v.
	3 to 7 fl oz Milestone	Aminopyralid (4) 0.047 to 0.109 lb	Apply to control broadleaf weeds. Can be tank-mixed with other herbicides.
	2 to 8 oz Overdrive	Dicamba (4) + Diflufenzopyr (19)	Controls a wide range of broadleaf weeds. Can be tank-mixed with other herbicides.
	1 to 4 pt Range Star , 0.5 to 3.5 pt Outlaw , or 0.33 to 2.5 pt Latigo	Dicamba (4) + 2,4-D (4)	See label for weed-specific rates and grazing restrictions. Do not use on buffalograss as injury will occur.
	2 to 5 oz Rave	Triasulfuron (2)/ Dicamba (4)	See label for directions, species, and restrictions.
	1 to 2 fl oz Sharpen	Saflufenacil (14)	Apply postemergence in-season for broadleaf weed control. Use 1% MSO. Do not use AMS. Do not apply in-season to buffalograss or switchgrass.
	4 to 8 oz Yukon	Halosulfuron (2) + Dicamba (4)	Apply after weed emergence to small, actively growing broadleaves. Can be tank-mixed with 2,4-D, Clarity, and Tordon 22K.

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Herbicides for Rangeland Weeds

Weeds	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
ANNUAL AND BIENNIAL WEEDS			
Common mullein	16 fl oz DuraCor	Aminopyralid (4) + Rinskor (4)	Apply in the rosette stage. Use a minimum of 15 GPA.
	4 pt Grazon P+D	Picloram (4) + 2,4-D (4)	A restricted-use pesticide. Apply during the rosette stage in spring or fall before bolting. Add a surfactant
	1.5 to 2.1 pt GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply to rosettes in the spring. Add NIS at 0.25 to 0.5%.
	0.2 oz Metsulfuron or 0.375 to 0.625 oz Cimarron Plus	Metsulfuron (2)	Apply during the rosette stage in the spring when plants are actively growing. Add a surfactant.
	5 to 7 fl oz Milestone	Aminopyralid (4)	Apply to rosettes in the spring. Add NIS at 0.25 to 0.5%.
Lanceleaf ragweed	1 qt of 4 lb/gal 2,4-D* amine or LVE + 0.5 pt Clarity or Banvel	2,4-D* amine (4) + Dicamba (4) 1 lb + 0.25 lb	Apply when weed has leaves and is growing actively. Do not let dairy animals graze on treated area within 7 days after treatment. Do not cut for hay for 37 days. Repeat applications may be necessary.
	0.5 to 1 pt Clarity, Banvel, or Vision	Dicamba (4) 0.25 to 0.5 lb	Apply when weed has leaves and is growing actively. Do not let dairy animals graze on treated area within 7 days after treatment. Do not cut for hay for 37 days. Repeat applications may be necessary.
Annual bromes	8 to 11 fl oz of 4.5 lb ae/gal Glyphosate (see glyphosate table)	Glyphosate (9) 0.28 to 0.39 lb ae	Apply to rangeland when native grasses are dormant in the fall or early spring and annual bromes (downy brome and Japanese brome) are actively growing. Desirable cool-season grasses, such as western wheatgrass, will be damaged. Do not use AMS. See various labels for rates, directions, and precautions.
Annual grasses and many broadleaves	2 to 12 oz Plateau	Imazapic (2) 0.032 to 0.188 lb	See label for tolerance of native grasses to Plateau and recommended use rates, timing, and use of adjuvants.
Snow-on-the-mountain	12 to 16 fl oz DuraCor	Aminopyralid (4) + Rinskor (4)	Apply with 1% MSO when the plants are 12 in. tall, but before blooming.
	2 to 4 pint Grazon P+D	Picloram (4) + 2,4-D (4)	A restricted-use pesticide. Apply prior to bud stage when plants are actively growing.
	1.5 to 2.1 pint GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply with NIS prior to blooming.
Common and cutleaf teasel	1.5 lb 2,4-D	2,4-D amine or LVE (4)	Apply to actively growing rosettes in the spring or fall.
	2 to 3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply in the spring or early summer to rosette or bolting plants, or to seedlings and rosettes in the fall prior to the ground freezing. Use higher rate on bolted plants.
	0.25 to 0.5 oz Escort XP	Metsulfuron (2)	Apply to rosettes or early bolted plants in the spring. Add NIS.

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Herbicides for Rangeland Weeds

Weeds	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
ANNUAL AND BIENNIAL WEEDS			
Common and cutleaf teasel	1.5 to 2.1 pint GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply in the spring prior to bolting.
	4 to 6 pint Grazon P+D	Picloram (4) + 2,4-D (4)	Apply to rosettes or early bolted plants in the spring.
	4 to 7 fl oz Milestone	Aminopyralid (4)	Apply in the spring while plants are actively growing.
	8 to 12 oz Plateau	Imazapic (2)	Follow label for timing, additives, and precautions.
	0.15 to 0.3 pint Stinger HL	Clopyralid (4)	Apply higher rate for heavy infestations or when growing conditions are less favorable.
PERENNIAL WEEDS			
Goldenrod Hoary vervain Western ironweed Western ragweed	1 to 2 qt of 4 lb/gal 2,4-D amine or LVE	2,4-D* amine, LVE, or mixed formulations (4) 1 to 2 lb	Apply when problem weed has leaves and is growing actively. Ironweed can be treated until bud stage. Use 20 gal or more of solution per acre. Repeat applications may be necessary. Consult herbicide labels for grazing and haying instructions. Follow directions and precautions on label.
	1 qt of 4 lb/gal 2,4-D amine or LVE + 0.5 pt Clarity , Banvel , or Vision	2,4-D* amine (4) + Dicamba (4) 1 lb + 0.25 lb	Apply when problem weed has leaves and is growing actively. Ironweed can be treated until bud stage. Use 20 gal or more of solution per acre. Repeat applications may be necessary. Consult herbicide labels for grazing and haying instructions. Follow directions and precautions on label.
	Cimarron Max	Metsulfuron (2) + 2,4-D amine (4) + Dicamba (4)	See label for rates, directions, restrictions, and cautions.
	1 to 4 pt Clarity , Sterling Blue , or Vision	Dicamba (4) 0.5 to 2 lb	Apply when problem weed has leaves and is growing actively. Ironweed can be treated until bud stage. Use 20 gal or more of solution per acre. Repeat applications may be necessary. Consult herbicide labels for grazing and haying instructions.
	16 fl oz + 16 to 32 fl oz DuraCor + 2,4-D amine	Aminopyralid (4) + Rinskor (4)/2,4-D (4)	Apply before flowering.
	1.2 to 2.1 pt GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply when broadleaf weeds are actively growing.
	Grazon P+D (see label for rates)	Picloram (4) + 2,4-D (4)	A restricted-use pesticide. Apply according to label directions. There are no grazing restrictions for non-lactating dairy animals or other livestock including horses, sheep, goats, and other animals in the treated area.
	3 to 7 fl oz Milestone	Aminopyralid (4) 0.047 to 0.109 lb	Apply to control broadleaf weeds. Can be tank-mixed with other herbicides.
	4 to 8 oz Overdrive	Dicamba (4) + Diflufenzopyr (19)	Addition of NIS or MSO is needed to achieve consistent weed control. Lower rate should be tank-mixed with other herbicides to enhance control.
	Surmount (see label for rates)	Picloram (4) + Fluroxypyr (4)	A restricted-use pesticide. Apply when weeds are small and actively growing.

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Herbicides for Rangeland Weeds

Weeds	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
PERENNIAL WEEDS			
Goldenrod Hoary vervain Western ironweed Western ragweed	1 pt to 1 qt Tordon 22K	Picloram (4) 0.25 to 0.5 lb	A restricted-use pesticide. Apply before bud stage when plant is growing actively. Follow directions, grazing limitations, and precautions on label.
	4 to 8 oz Yukon	Halosulfuron (2) + Dicamba (4)	Apply after weed emergence to small, actively growing broadleaves. Can be tank-mixed with 2,4-D, Clarity, and Tordon 22K.
Broom snakeweed	Cimarron Max	Metsulfuron (2) + 2,4-D amine (4) + Dicamba (4)	Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
	0.5 to 1 oz Escort XP or 0.625 oz Cimarron Plus	Metsulfuron (2) 0.019 to 0.038 lb	Apply in fall when the plant is actively growing.
	1 to 2 qt Grazon P+D	Picloram (4) + 2,4-D (4)	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
	1 pt Tordon 22K	Picloram (4) 0.25	A restricted-use pesticide. Apply during active growth between the full-leaf and early bloom stages.
Poison and water hemlock	2 to 4 pt Grazon P+D	Picloram (4) + 2,4-D (4)	A restricted-use pesticide. Apply to poison hemlock from rosette stage in spring or fall up to 36 inches tall. Apply to water hemlock from rosette stage in spring or fall up to bud stage.
Poison hemlock	2.5 to 3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	For best results, apply in early March through late May. Use higher rates if application occurs later in this time frame. See label for tall fescue and smooth brome grass precautions.
	1.25 oz Cimarron Plus	Metsulfuron (2) + Chlorsulfuron (2)	Add appropriate spray adjuvant.
	12 to 16 fl oz DuraCor	Aminopyralid (4) + Rinskor (4)	Apply in late winter through early spring.
	1 to 2 oz Escort XP	Metsulfuron (2)	Add appropriate spray adjuvant.
Old World Bluestems	0.25 to 0.5 lb/a Arsenal	Imazapyr (2)	Apply when Old World Bluestem is actively growing. For lower rate, 2 applications per year may be necessary about 8 weeks apart. Add a non-ionic surfactant. For spot treatment use 1 to 2 pt in 25 gallons of water. At the recommended rates, Arsenal is selective with most native grasses and forbs surviving treatment.
	2 to 3 lb/a Glyphosate	Glyphosate (9)	Use higher rate if dry soil conditions exist. Apply when Old World Bluestem is actively growing, preferably prior to seed production. Add a non-ionic surfactant. For spot treatment use 4 to 6 pt in 25 gallons of water. Check the glyphosate label to determine use on rangeland and pasture. Glyphosate is a non-selective herbicide and will damage most green growing plants.

* Numbers in parentheses indicate herbicide site of action; see p. 3 for more information. Products often are available in several formulations or brand names, and label information may vary. Refer to the Names, Toxicities, and Persistence table, p. 12.

Herbicides for Rangeland Weeds

Weeds	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
PERENNIAL WEEDS			
Crownvetch	1.5 to 2 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply to vegetative growth stage prior to bloom. Use higher rate when growing conditions are less favorable or plants are more mature. Add 0.25 to 0.5% non-ionic surfactant. Smooth brome may be suppressed when plants are environmentally stressed. Tall fescue may be stunted.
	16 to 20 fl oz DuraCor	Aminopyralid (4) + Rinskor (4)	Apply when plants are actively growing.
	0.5 oz Escort XP	Metsulfuron (2)	Apply when plants are actively growing. Environmental stress will reduce herbicide effectiveness. See label for suggested surfactants. Tall fescue may be stunted. Smooth brome may be suppressed when plants are environmentally stressed.
	1.2 to 1.5 pt GrazonNext HL	Aminopyralid (4) + 2,4-D (4)	Apply when plants are actively growing up to the bloom stage. Use higher rate when growing conditions are less favorable or plants are more mature. Smooth brome may be suppressed when plants are environmentally stressed. Add 0.25 to 0.5% non-ionic surfactant.
	0.5 oz Milestone	Aminopyralid (4)	Apply when plants are actively growing and under conditions favorable for growth. Add 0.25 to 0.5% non-ionic surfactant. Smooth brome may be suppressed by Milestone.

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Herbicides for Brush and Trees on Rangeland

Brush or tree	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
FOLIAR APPLICATION			
Buckbrush Plum, sand and American Smooth sumac	1 to 2 qt of 4 lb/gal 2,4-D	2,4-D* amine, LVE, or mixed formulations (4) 1 to 2 lb	Apply to foliage in spring when brush is nearing full-leaf stage and growing actively. Repeat applications may be necessary in following years. Normal treatment time: buckbrush (May 1-15), sand plum (May 20-June 10), and sumac (June 10-25).
	1 to 2 qt Grazon P+D	Picloram (4)/ 2,4-D (4)	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
	1 gal Grazon P+D + 1 to 2 pt Remedy Ultra or 1.5 to 3 pt Trycera in 100 gal water	Picloram (4)/ 2,4-D (4) + Triclopyr (4) 0.54/2 lb + 0.5 to 1 lb	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
Blackberry Roughleaf dogwood	16 fl oz + 16 fl oz DuraCor + Remedy Ultra	Aminopyralid (4) + Rinskor (4)/ Triclopyr (4)	Apply once leaves have fully expanded in late spring. Applications can be made into mid-September as long as leaves are healthy and green.
	1 qt Grazon P+D + 1 pt Remedy Ultra or 1.5 to 3 pt Trycera in 100 gal water	Picloram (4)/ 2,4-D (4) + Triclopyr (4) 0.135/0.5 + 0.5 lb	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label. Label recommends 1 gal Grazon P+D plus 1 to 2 qt Remedy Ultra/100 gal spray solution.
	Surmount	Picloram (4) + Fluroxypyr (4)	A restricted-use pesticide. Apply as a high-volume spray 1 to 2% v/v. Dogwood can be controlled with 0.5% v/v spray solution. Control can be improved by addition of NIS.
Eastern red cedar	Escort XP	Metsulfuron (2)	Apply 1-2 oz/100 gal as a high-volume foliar spray. Add 0.25-0.5% non-ionic surfactant. Treat anytime during the growing season.
	Surmount	Picloram (4) + Fluroxypyr (4)	A restricted-use pesticide. Apply 1-2% solution as a high-volume foliar spray. Complete coverage is essential. Add 0.25-0.5% non-ionic surfactant. Plants greater than 3 feet tall may not be controlled. Treat anytime during the growing season.
	Tordon 22K	Picloram (4)	A restricted-use pesticide. Apply 1% solution as a high-volume foliar spray. Complete coverage is essential. Treat anytime during the growing season.
False indigobush	3.3 oz Chapparral	Aminopyralid (4) + Metsulfuron (2)	Apply in spring when leaves are fully expanded. Include MSO 1% v/v or NIS 0.25% v/v.
	7 fl oz Milestone	Aminopyralid (4)	Apply in spring when leaves are fully expanded. Include NIS 0.25-0.5% v/v.
Black locust and honeylocust	16 fl oz + 16 fl oz DuraCor + Remedy Ultra	Aminopyralid (4) + Rinskor (4)/ Triclopyr (4)	Apply once leaves have fully expanded in late spring. Applications can be made into mid-September as long as leaves are healthy and green.
	7 fl oz Milestone	Aminopyralid (4) 0.11 lb	Apply during early summer during full-leaf stage.

* Numbers in parentheses indicate herbicide site of action; see p. 3 for more information. Products often are available in several formulations or brand names, and label information may vary. Refer to the Names, Toxicities, and Persistence table, p. 12.

Herbicides for Brush and Trees on Rangeland

Brush or tree	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
FOLIAR APPLICATION			
Multiflora rose Poison ivy	Glyphosate	Glyphosate (9) 1% solution	Apply as spot treatment with hand equipment before leaves lose green color. Vegetation in treated area can be damaged. Avoid drift outside target area.
Multiflora rose	3.3 oz Chaparral	Aminopyralid (4) + Metsulfuron (2)	Apply when leaves have fully expanded in late spring. Application can occur throughout the year as long as leaves are healthy and green. Use a minimum of 15 gal/a of solution to ensure good coverage of the entire plant. See label for tall fescue and smooth brome grass precautions.
	0.5 oz Escort XP, 0.5 to 1 oz Metsulfuron, or 0.625 oz Cimarron Plus	Metsulfuron (2) 0.019 to 0.038 lb	Apply in the spring, shortly after full-leaf stage. Complete coverage is necessary for effective control. Do not apply to tall fescue.
	Grazon P+D (see label for rates)	Picloram (4) + 2,4-D (4)	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label.
	2 qt Grazon P+D + 1 pt Remedy Ultra or 1.5 pt Trycera in 100 gal water	Picloram (4)/ 2,4-D (4) + Triclopyr (4) 0.27/1 + 0.5 lb	A restricted-use pesticide. Apply according to label directions. Follow directions, grazing limitations, and precautions on label. Label recommends 1 gal Grazon P+D plus 1 to 2 qt Remedy Ultra/100 gal spray solution.
	1.5 pt GrazonNext HL + 1 to 2 pt Remedy Ultra or 1.5 to 3 pt Trycera	Aminopyralid (4)/ 2,4-D (4) + Triclopyr (4)	Apply when leaves have fully expanded in late spring. Application can occur throughout the year as long as leaves are healthy and green. Use a minimum of 15 gal/a of solution to ensure good coverage of the entire plant.
Many woody plants and broadleaf weeds	1 qt of 4 lb/gal 2,4-D + 1 pt Remedy Ultra or 1.5 pt Trycera	2,4-D* (4) + Triclopyr (4) 1 lb + 0.5 lb	Remedy Ultra and Trycera can be tank-mixed with 2,4-D amine or low volatile ester.
	2 qt Crossbow	2,4-D* (4)/ Triclopyr (4) 1/0.5 lb	Crossbow is a premix of 2 lb 2,4-D and 1 lb triclopyr/gal for control of many woody plants on rangeland and pasture. Apply to foliage and green stems when woody plants are growing actively. Apply Crossbow in water at 1.5% spray mix or 1.5 gal/100 gal spray mix.
	3 to 6 pt Surmount	Picloram (4) + Fluroxypyr (4)	A restricted-use pesticide. Apply broadcast or as a 1 to 2% v/v spray to foliage. Control may be improved by addition of NIS.
Mixed brush including Osage orange (hedge) and locust	1 qt of 4 lb/gal 2,4-D + 1 pt Remedy Ultra or 1.5 pt Trycera + 1 pt Tordon 22K	2,4-D (4) + Triclopyr (4) + Picloram (4) 1 lb + 0.5 lb + 0.25 lb	Tordon 22K is a restricted-use pesticide. Apply before full-leaf stage to foliage and green stems when woody plants are growing actively. See label for methods of application, rates for tank mixes, and precautions.
	16 fl oz + 16 fl oz DuraCor + Remedy Ultra	Aminopyralid (4) + Rinskor (4)/ Triclopyr (4)	Apply once leaves have fully expanded in late spring. Applications can be made into mid-September as long as leaves are healthy and green.

* Numbers in parentheses indicate herbicide site of action; see p. 3 for more information. Products often are available in several formulations or brand names, and label information may vary. Refer to the Names, Toxicities, and Persistence table, p. 12.

Herbicides for Brush and Trees on Rangeland

Brush or tree	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
FOLIAR APPLICATION			
Prickly pear	Grazon P+D	Picloram (4) + 2,4-D (4) 1.1 + 4 lb	A restricted-use pesticide. Use for spot treatment any time of the year with 2% solution. Spray pads to runoff. Use 0.25 to 0.5% non-ionic surfactant.
	3 to 4 pt Surmount	Picloram (4) + Fluroxypyr (4)	A restricted-use pesticide. See label for proper timing, spray volumes, and other directions and precautions. For spot treatment apply 1-2% solution plus non-ionic surfactant.
	Tordon 22K 0.5 to 1 pt	Picloram (4) 0.125 to 0.25 lb	A restricted-use pesticide. Apply before full-bloom stage while plant is growing actively (May-June). Use higher rate for more complete control. Follow directions, grazing limitations, and precautions on label. For spot treatment apply 0.5% solution plus non-ionic surfactant.
Russian olive	1 qt 2,4-D + 0.5 pt Clarity or Banvel	2,4-D* amine (4) + Dicamba (4) 1 lb + 0.25 lb	Apply from late May to mid-June when plant is growing actively. For aerial application, use 3 gal or more of total solution per acre. For individual plant treatment, use 25 gal of solution; wet leaves for complete coverage.
Saltcedar (tamarisk)	2 qt Arsenal	Imazapyr (2)	Add 1 qt/a MSO. For high-volume foliar sprays, use 1% Arsenal + 1% MSO. Apply to wet, not run off.
	Arsenal + Glyphosate	Imazapyr (2) + Glyphosate (9)	For high-volume foliar sprays, use 0.5% Arsenal + 0.5% glyphosate + 1% MSO or 0.25% NIS.
	Plateau	Imazapic (2)	For high-volume foliar sprays, use 1% Plateau plus a MSO or NIS according to the label.
Sand sagebrush	1 qt of 4 lb/gal 2,4-D	2,4-D* amine, LVE, or mixed formulations (4) 1 lb	Leave untreated strips in areas with high wind-erosion hazard. Apply when sagebrush is in the bud stage.
Yucca (small soapweed)	3.3 oz + 2 pt Chaparral + 2,4-D	Aminopyralid (4) + metsulfuron (2) + 2,4-D (4)	Apply during flower stalk elongation through pod development stages. By air, use a minimum of 4 gal/a spray volume. Add an adjuvant. May require repeat application.
	0.625 to 1 oz + 2 pt Cimarron Plus + 2,4-D	Metsulfuron (2) + Chlorsulfuron (2) + 2,4-D (4)	For suppression only. Apply from 2 weeks before blooming to 2 weeks after blooming. By air, use a minimum of 3 gal/a spray volume. Add an adjuvant.
DORMANT STEM APPLICATION			
NOTE: Do not apply herbicides when grass is in boot to milk stage where grass seed production is desired. Do not apply to newly seeded areas or after grasses begin to head. See herbicide labels for directions, precautions, and grazing limitations.			
Many woody plants	Remedy Ultra 0.75 to 1.5% in diesel oil or kerosene	Triclopyr (4)	Thoroughly wet upper and lower stems, including root collar and any ground sprouts. Treat when brush is dormant and bark is dry. Follow label directions.
	Trycera	Triclopyr (4)	See label for methods, rates, tank mixes, and precautions.
Mixed brush including blackberry and multiflora rose	Crossbow 1 to 4% in diesel oil or kerosene	2,4-D* (4)/ Triclopyr (4)	Crossbow is a premix of 2 lb 2,4-D and 1 lb triclopyr/gal for control of many woody plants on rangeland and pasture. Thoroughly wet all stems. Treat any time when brush is dormant and the bark is dry.
Multiflora rose	Dicamba	Dicamba (4)	Apply as undiluted spot treatment or as low-oil basal bark treatment when plants are dormant.

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Herbicides for Brush and Trees on Rangeland

Brush or tree	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
SOIL APPLICATION			
Buckbrush, Cottonwood, Dogwood, Elm, Multiflora rose, Oaks, Smooth sumac, Willow	Spike 20P (see label for rates)	Tebuthiuron (5)	Apply to soil surface on grid pattern or evenly spaced under drip line of plants. See label for rates, directions, and precautions. Spike 20P is recommended for multistemmed species, such as dogwood, buckbrush, and smooth sumac.
Eastern red cedar	Tordon 22K 3 to 4 mL of product/ 3 feet of plant height	Picloram (4)	A restricted-use product. Apply on upslope side of plant during April and May or September and October with exact delivery hand-gun applicator. Rainfall is needed for activation. Surrounding vegetation can be damaged.
Eastern red cedar, Elm, Hackberry, Honey locust, Multiflora rose, Oaks, Osage orange, Russian olive, Willow	Velpar L 2 to 4 mL of product/ inch of stem diameter or 1 to 2 pellets Pronone Power Pellet Herbicide /inch stem diameter or 1.6 to 3.2 mL Velossa /inch of stem diameter	Hexazinone (5)	Apply from April through June in period of active growth. Apply Velpar L with exact delivery hand-gun applicator. Precipitation is needed for activation. Do not apply to brush in standing water or use on marshy or poorly drained areas. Expect to see some grass damage.
Yucca (small soapweed)	Velpar L 4 mL of product/inch of stem diameter, or 1 to 2 pellets Pronone Power Pellet Herbicide /plant, or 1.66 to 3.32 mL Velossa /inch of stem diameter	Hexazinone (5)	Apply from April through June when plants are actively growing. Apply Velpar L with an exact delivery hand-gun applicator. Apply on the uphill side at the edge of the plant. Expect to see some grass damage.
BASAL BARK APPLICATION			
Many woody plants	PastureGard HL 25% in diesel oil or kerosene	Triclopyr (4) + Fluroxypyr (4)	Use on susceptible woody plants with less than 6-inch basal diameter. Spray basal parts of brush and trees to thoroughly wet lower 12 to 15 inches of stems. Apply at any time, except when snow or water prevent spraying to the ground line.
	Pathfinder II	Triclopyr (4)	A ready-to-use product. No mixing required. Use on susceptible woody plants with less than 6-inch basal diameter. Spray basal parts of brush and trees to thoroughly wet lower 12 to 15 inches of stems. Apply at any time, except when snow or water prevent spraying to the ground line.
	Remedy Ultra or Trycera 25% in diesel oil or kerosene	Triclopyr (4)	Controls woody plants, such as elm, Osage orange, ash, locust, mulberry, and oaks. Spray basal parts of brush or trees to a height of 15 to 20 inches above the ground. Thoroughly wet all basal bark areas, including crown buds and ground sprouts. Best root control is obtained when application is made from mid-July to mid-January. Periods of dry weather also will aid in root control.
Black locust and honeylocust	Milestone 1 to 5% in basal diluent	Aminopyralid (4)	Apply to stems less than 6 inches in diameter at any time, except when snow or water prevent spraying to the ground line. Spray basal trunks to a height of 12 to 15 inches.

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Herbicides for Brush and Trees on Rangeland

Brush or tree	Formulated product and amount/acre*	Herbicide and active ingredient needed/acre	Comments and limitations
CUT STUMP OR FRILL APPLICATION			
Ash Cottonwood Willow	Crossbow 4% in diesel, fuel oil, or kerosene	Triclopyr (4) + 2,4-D (4)	Apply to stump immediately after cutting. Thoroughly wet stump, especially the cambium layer just inside the bark. Apply at any time of the year except when snow or water prevent spraying to the ground line.
Cottonwood Elm Oak species	Dicamba (see label for specific directions)	Dicamba (4)	Apply to stump or frill immediately after cutting. See labels for rates, directions, and precautions. Best root control is obtained when application is made from mid-July to mid-January. Periods of dry weather also will aid in root control.
Many woody plants, including saltcedar (tamarisk)	Arsenal 10% in water	Imazapyr (2)	Apply to cambium area of freshly cut stump surface.
	Pathfinder II	Triclopyr (4)	A ready-to-use product. No mixing required. Apply product to wet the cut surface and sides of the stumps. Apply at any time, except when snow or water prevent spraying to the ground line.
	PastureGard HL 25% in diesel oil or kerosene	Triclopyr (4) + Fluroxypyr (4)	Apply to stump or frill immediately after cutting. Thoroughly wet sides of stump, root collar, and cut surface. Apply at any time, except when snow or water prevent spraying to the ground line. Use undiluted PastureGard HL for saltcedar control.
	Remedy Ultra 25% in diesel oil or kerosene	Triclopyr (4)	Apply to stump or frill immediately after cutting. See label for rates, directions, and precautions. Best root control is obtained when application is made from mid-July to mid-January. Periods of dry weather also will aid in root control.
Black locust and honeylocust	Trycera	Triclopyr (4)	See label for methods, rates, tank mixes, and precautions.
	Milestone 10% in water	Aminopyralid (4)	Spray cut surface as soon as possible after cutting. Cambium next to bark is most vital area to wet.
	Tordon 22K 10% in water	Picloram (4)	Spray cut surfaces within 15 minutes of cutting stem. Cambium next to bark is most vital area to treat.
GROWING POINT AND LEAF BASE (CROWN) TREATMENT			
Yucca (small soapweed)	PastureGard HL 1% in diesel or fuel oil	Triclopyr (4) + Fluroxypyr (4)	Thoroughly wet the center of the plant, including growing point and leaf bases to the soil surface. Complete coverage of leaves is not necessary.
	Pathfinder II	Triclopyr (4)	A ready-to-use product. Thoroughly wet the center of the plant, including growing point. Complete coverage of leaves is not necessary.
	Remedy Ultra 2% in diesel or fuel oil	Triclopyr (4)	Thoroughly wet the center of the plant, including growing point and leaf bases to the soil surface. Complete coverage of leaves is not necessary.

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