

RANGE & PASTURE

Southwest Rancher Guide



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This guide is published by Corteva Agriscience™ to provide you with helpful information on managing weeds and brush on grazing lands, grass hayfields and Conservation Reserve Program (CRP) acres.

Common Measurement Conversions	
1 gallon (gal)	= 4 quarts (qt)
1 gallon (gal)	= 8 pints (pt)
1 gallon (gal)	= 128 fluid ounces (fluid oz)
1 quart (qt)	= 2 pints (pt)
1 quart (qt)	= 32 fluid ounces (fluid oz)
2.25 pints (pt)	= 36 fluid ounces (fluid oz)
1.5 pints (pt)	= 24 fluid ounces (fluid oz)
1.25 pints (pt)	= 20 fluid ounces (fluid oz)
1 pint (pt)	= 16 fluid ounces (fluid oz)
0.75 pint (pt)	= 12 fluid ounces (fluid oz)
1 pound (lb)	= 16 ounces (oz.)

Choose the Right Tools

Herbicide	Attributes
<div><div><div>DuraCor®</div><div>HERBICIDE</div></div></div>	<div><div>Featuring the first new active ingredient for pastures and rangeland in nearly 15 years.</div><div>DuraCor® herbicide brings livestock producers and land managers the broadest spectrum broadleaf weed control available for their grazing acres — one that's loaded with benefits. DuraCor is powered by Rinskor™ active, a reduced risk herbicide that won the American Chemical Society's Green Chemistry Challenge award. The American Chemical Society's Green Chemistry award, given to companies or institutions that have developed a new process or product that helps protect public health and the environment, is the United States' most prestigious award program for green chemistry innovations. Common usage rate is 16 fluid ounces per acre.</div></div>
<div><div><div>GrazonNext® HL</div><div>HERBICIDE</div></div></div>	<div><div>Making pasture improvement easy.</div><div>GrazonNext® HL herbicide is the easiest way to get broadleaf weeds out of the way of pasture production. It provides a simple, lasting solution for the toughest pasture and rangeland weeds and clears the way for more forage, meaning greater flexibility in a grazing program and higher per-acre beef production at the lowest cost possible.</div></div>
<div><div><div>Chaparral™</div><div>HERBICIDE</div></div></div>	<div><div>Specialized broad-spectrum weed, brush and grass management.</div><div>Chaparral™ herbicide is the broadest spectrum weed and brush control product available for rangeland and pastures. It is the simple answer for several significant, unique needs, such as reducing the impact of toxic fescue through seedhead suppression and improving hay quality by removing Pensacola bahiagrass from bermudagrass.</div></div>
<div><div><div>MezaVue™</div><div>HERBICIDE</div></div></div>	<div><div>The standard in pricklypear control.</div><div>Pricklypear, by nature, is notoriously slow to show symptoms, die and melt away. Faster symptoms with MezaVue® herbicide deliver a piece-of-mind benefit that the herbicide is working. Faster control means native grasses can respond sooner to get rangeland back into production. The more cactus you control, the more of that area you open to grazing.</div></div>

Choose the Right Tools

Herbicide	Attributes
<div>Sendero[®]</div> <div>HERBICIDE</div>	<p>The standard in mesquite control.</p> <p>Sendero[®] herbicide is the standard in mesquite control™, offering greater than 15 percent better control and more consistency than the old standard. Sendero does not harm grasses and many desirable brush species. Controlling mesquite with Sendero results in increased grass production and improved wildlife habitat.</p>
<div>Surmount[®]</div> <div>HERBICIDE</div>	<p>Premium broadleaf weed control.</p> <p>Surmount[®] herbicide provides excellent broad-spectrum broadleaf weed control without 2,4-D. Surmount[®] herbicide also delivers outstanding pricklypear and cholla cactus control.</p>
<div>Remedy[®] Ultra</div> <div>HERBICIDE</div> <div>Remedy[®]</div> <div>HERBICIDE</div>	<p>Simply the best choice against brush.</p> <p>Remedy[®] and Remedy[®] Ultra herbicides provide convenient, flexible, long-lasting control of more than 35 brush species. Whether protecting grazing acres from encroaching brush, maintaining valuable fence lines or reclaiming overgrown pastureland, Remedy and Remedy Ultra gets the job done.</p>
<div>PastureGard[®] HL</div> <div>HERBICIDE</div>	<p>Pasture weed and brush control with a single product.</p> <p>PastureGard[®] HL herbicide gives ranchers one flexible product that takes out broadleaf weeds and brush. Whether it's protecting, improving or restoring valuable grazing acres, weed and brush control with PastureGard HL clears the way for more forage, better land utilization and increased property values — all while helping ranchers raise more pounds of beef at the lowest cost possible.</p>
<div>GrazonPD3[™]</div> <div>HERBICIDE</div>	<p>General broadleaf control solution.</p> <p>GrazonPD3[™] herbicide is a new, broad spectrum residual herbicide that controls more than 70 weeds, as well as suppresses select brush species. Containing 2,4-D Choline and Picloram, GrazonPD3 is backed by trusted and proven active ingredients, providing peace of mind.</p>

Broadleaf Weed Control Using Broadcast Applications

Herbicide and Timing Recommendations | ANNUAL WEEDS

Important Notes—Annual and Biennial Weeds

Match herbicide rate with the growth stage of weeds and difficulty of control. Within the herbicide's labeled range, increase the application rate as plants become more mature, when weed foliage is tall or dense or when growing conditions are less than favorable.

Use enough spray volume. Recommended spray volume is 10 to 25 gallons per acre for ground broadcasts or 2 to 5 gallons per acre by air. Higher spray volumes in the range generally provide better coverage and better control. Use the recommended rate of an agricultural surfactant, plus a drift control agent where needed.

NOTE—The lowest cost feed you can buy is the extra grass you get from spraying weeds. As a rule of thumb, for every pound of weeds you control, you'll get an extra pound of grass.

Annual Weed Species	Herbicide	Product Per Acre	Time to Treat
Bitter Sneezeweed	DuraCor® OR Chaparral™ OR GrazonNext® HL	12 to 16 fluid oz/A OR 1.5 to 2.0oz/A OR 24 to 32oz/A	Use lower rate when weeds are small and actively growing. Increase rate as season progresses and plants become more mature, weeds 4 to 6 inches, good moisture.
Broomweed (annual)	DuraCor OR Chaparral OR GrazonNext HL	12 to 16 fluid oz/A OR 2.0oz/A OR 24 to 32oz/A	Early applications are recommended when weeds are small and actively growing. Increase rate as season progresses and plants become more mature, weeds 4 to 6 inches, good moisture.
Buffalobur	DuraCor OR GrazonNext HL	16 to 20 fluid oz/A OR 24 to 32oz/A	Use lower rates early in season, weeds 4 to 6 inches, good moisture.
Buttercup, curly	DuraCor OR Chaparral OR GrazonNext HL	16 to 20 fluid oz/A OR 1.5 to 2.5oz/A OR 24 to 32oz/A	Use lower rates early in season, weeds 4 to 6 inches, good moisture.
Cocklebur	DuraCor OR Chaparral OR GrazonNext HL	12 to 16 fluid oz/A OR 2.0oz/A OR 24 to 32oz/A	Use lower rate when weeds are small and actively growing. Increase rate as season progresses and plants become more mature, and weeds 4 to 6 inches, good moisture.

Broadleaf Weed Control Using Broadcast Applications			
Herbicide and Timing Recommendations ANNUAL WEEDS			
Annual Weed Species	Herbicide	Product Per Acre	Time to Treat
Croton (woolly)	DuraCor® OR Chaparral OR GrazonNext HL	16 to 20 fluid oz/A OR 1.5 to 2oz/A OR 24 to 32oz/A	Use lower rate when weeds are small and actively growing. Use higher rate on 10-to-12 inch tall, mature weeds with adequate leaf surface.
Horsemint, beebalm	DuraCor OR Chaparral™ OR GrazonNext® HL	16 to 20 fluid oz/A OR 1.5 to 2oz/A OR 24 to 32oz/A	Winter Annual - Use lower rate in early season up to 3 buttons. Efficacy may decrease after this stage. Increase rate as season progresses until senescence
Marshelder, sumpweed	DuraCor OR Chaparral	16 to 20 fluid oz/A OR 2.0 to 2.5oz/A	16 fluid ounces of DuraCor® herbicide per acre on plants less than 4 inches tall. Taller, more mature plants require 20 fluid ounces of DuraCor herbicide per acre with 1% MSO per volume of water used . Once the plant branches, do not treat.
Pigweed, spiny amaranth	DuraCor OR GrazonNext HL	16 to 20 fluid oz/A OR 24 to 32oz/A	Apply 16 to 20 fluid ounces of DuraCor herbicide per acre when all weeds emerge. Use DuraCor at 20 fluid ounces for mature plants.
Lanceleaf ragweed	DuraCor OR GrazonNext HL	16 to 20 fluid oz/A OR 32oz per acre	Apply 16 to 20 fluid ounces of DuraCor® per acre + 0.5 lb ae per acre, 2,4-D amine or 32 ounces of GrazonNext® HL per acre.
Ragweed (annual or common)	DuraCor® OR Chaparral OR GrazonNext HL	12 to 16 fluid oz/A OR 2 to 2.5oz/A OR 32oz/A	Use lower rates early in season, weeds 4 to 6 inches, good moisture.



Broadleaf Weed Control Using Broadcast Applications			
Herbicide and Timing Recommendations ANNUAL WEEDS			
Annual Weed Species	Herbicide	Product Per Acre	Time to Treat
Snow-on-the mountain	DuraCor® OR Surmount®	16 to 20 fluid oz/A OR 32oz/A	Apply 16 to 20 fluid ounces of DuraCor® herbicide per acre (with 1% MSO) or 3 pints of Surmount® herbicide per acre. Apply when weeds are small and actively growing. Increase the rate as the season progresses and plants become more mature.
Sunflower (annual)	DuraCor OR Chaparral™ OR GrazonNext HL	16 fluid oz/A OR 1.5 to 2.0oz/A OR 24 to 32oz/A	Spray when plants are 8 to 10 inches tall.
Upright coneflower	DuraCor OR GrazonNext HL OR Surmount®	16 to 20 fluid oz/A OR 32oz/A OR 24 to 48oz/A	Spray when plants are 2 to 6 inches tall before flowering.
Western bitterweed	GrazonNext HL	32oz/A	Apply GrazonNext® HL herbicide per acre. Spray prior to bloom in spring when weeds are 4 to 6 inches and there is adequate moisture.

Broadleaf Weed Control Using Broadcast Applications

Herbicide and Timing Recommendations BIENNIAL WEEDS			
Biennial Weed Species	Herbicide	Product Per Acre	Time to Treat
Bull Thistle Musk Thistle Plumeless Thistle	DuraCor OR Chaparral OR GrazonNext HL	12 to 16 fluid oz/A OR 2oz/A OR 24 to 32oz/A	Treat in vegetative state prior to bloom, add 0.5 lb of 2,4-D late season through early flower. Apply during the rosette stage early in the season. Fall to early winter applications can be made to rosettes prior to the first hard frost.
Scotch Thistle	DuraCor OR GrazonNext HL	16 to 20 fluid oz/A OR 24 to 32oz/A	

Broadleaf Weed Control Using Broadcast Applications

Herbicide and Timing Recommendations PERENNIAL WEEDS			
Important Notes—Perennial Weeds Match rate and timing to the targeted perennial weed. Spray timing varies considerably for perennial broadleaf weeds. Within a labeled application rate range, increase the rate as plants become more mature, when weed foliage is tall or dense or when growing conditions are less than favorable. Use enough spray volume. Recommended spray volume is 10 to 25 gallons per acre ground broadcast or 2 to 5 gallons per acre by air. Higher spray volumes in the range generally provide better coverage and better control. Use the recommended rate of an agricultural surfactant, plus a drift control agent where needed.			
Perennial Weed Species	Herbicide	Product Per Acre	Time to Treat
Antelopehorn Milkweed	Surmount®	48oz/A	Apply to vegetative stage prior to bloom.
Broom Snakeweed (Perennial Broomweed)	Chaparral™ OR Tordon® 22K OR Surmount	3.3oz/A OR 16oz/A OR 48oz/A	Spray during and after full bloom in fall, with good moisture.
Bullnettle	DuraCor® OR GrazonNext® HL OR Surmount	16 to 20 fluid oz/A + 16oz 2,4-D Amine OR 32oz/A OR 24 to 48oz/A	Spray when plants begin to flower in the spring.
Carolina horsenettle	DuraCor OR GrazonNext HL OR Surmount	16 fluid oz/A OR 24 to 32 oz/A OR 24 to 48 oz/A	Spray during or after full bloom in the summer, with good moisture.

Broadleaf Weed Control Using Broadcast Applications

Herbicide and Timing Recommendations | PERENNIAL WEEDS

Perennial Weed Species	Herbicide	Product Per Acre	Time to Treat
Dandelion	DuraCor® OR GrazonNext HL	16 fluid oz/A OR 24 to 32oz/A	Spray when plants are 4 to 6 inches tall.
Dogfennel	GrazonNext HL OR PastureGard® HL OR Surmount	32oz/A OR 16 to 24oz/A OR 24 to 48oz/A	Spray when plants are 8 to 10 inches tall.
Horehound	DuraCor OR GrazonNext® HL	16 to 20 fluid oz/A OR 24 to 32oz/A	Apply when actively growing.
Sericea lespedeza	PastureGard HL OR Remedy® OR Chaparral	16 to 24oz/A OR 16 to 24oz/A OR 3.3oz/A	Begin applications when weeds are a minimum of 10-12 inches tall and actively growing. Continue applications though Fall with good moisture and active growth. The use of higher rates will be needed for late season applications and dense stands. Use a minimum of 10 GPA by ground and 5 GPA by air for best results.
Silverleaf nightshade	DuraCor OR GrazonNext HL	16 to 20 fluid oz/A OR 24 to 32oz/A	Spray when plants begin to flower in the spring.
Oldmans beard	MezaVue®	32oz per acre/A	Apply in mid-summer through fall when plants have mature foliage.
Upright Prairie Coneflower	DuraCor®	16 to 20 fluid oz/A	Spray plants when they are 2 to 6 inches tall before bloom.
Western Ragweed	DuraCor OR GrazonNext® HL	16 to 20 fluid ounces/A OR 24 to 32oz per acre/A	Apply when plants are small and actively growing before bloom.

Control Bahiagrass and Broadleaf Weeds with Chaparral™ Herbicide

Notes

Bahiagrass may have its place as low input, low yield pasture, but many bermudagrass producers consider it a weed. Bahia reduces forage yields from bermudagrass pastures and hay fields, lowers bale quality and makes hay harder to market.

Broadleaf weeds in a bermudagrass have a similar depressing effect on yield, quality and marketability.

Two Birds, One Stone

You can achieve cleaner bermudagrass season long with one early season application. Chaparral™ herbicide controls both Pensacola bahia and a wide spectrum of broadleaf weeds.

Chaparral is a unique dry formulation intended to be mixed with water. To control Pensacola bahiagrass in established bermudagrass, apply Chaparral at the labeled rate of 2 to 2.5 ounces/A. Spray after greenup in the spring, but before bahiagrass seedhead formation. Spray only when environmental conditions favor grass growth.

No Tank-Mix Partners

Do not add 2,4-D to Chaparral in a tank mix or use liquid fertilizer as a carrier unless you're willing to accept a lower level of bahiagrass control. Chaparral in water with surfactant is the most effective mix on Pensacola bahiagrass.



Blueleaf Weed Control Using Individual Plant Foliar Applications

Herbicide	Product Rate Per 100 Gallons of Water
DuraCor[®] HERBICIDE	0.5 – .75 Gallons
Chaparral[™] HERBICIDE	3.3 – 6.6 Ounces
GrazonNext[®] HL HERBICIDE	1 Gallon
PastureGard[®] HL HERBICIDE	1 Gallon
Surmount[®] HERBICIDE	1 Gallon

Notes

Weed infestations often get a start in a particular area. It may be from weed seed washed in or emergence from bare soil in high-traffic sites around pens or water. In those situations, a hand-applied foliar application can keep a localized population from seeding an entire pasture. This is especially true for noxious, highly invasive weeds like thistles.

In Pasture Weed Species Controlled

Bitter sneezeweed	Buffalobur	Marshelder	Silverleaf nightshade	Thistles	Western horsenettle
Broom snakeweed (Perennial Broomweed)	Croton	Plantain (Talloweed)	Smartweed	Upright coneflower	Western ragweed
Broomweed (Annual)	Carolina horsenettle	Prairie geradia	Sunflower (Annual)	Western bitterweed	Wild carrot

Broadcast Applications on Brush

The following table gives you a list of several choices available to control certain species. The cost and degree of control offered by the different tank mixes will vary, so it's important to talk with your Corteva Agriscience™ representative before you decide.

Notes

For brush densities of more than 200-300 plants per acre, broadcast applications usually will be more cost-effective than individual plant treatments.

Important Tips

1. Read and follow all label directions and restrictions.
2. Properly calibrate equipment.
3. Use enough spray volume. Recommended spray volume is 10 to 25 gallons per acre ground broadcast or 4 to 5 gallons per acre by air. Higher spray volumes in the range generally provide better coverage and better control. Use the recommended rate of an agricultural surfactant, plus a drift control agent where needed.
4. Apply herbicides when environmental conditions are as close to optimum as possible. Use the recommended rate of an agricultural surfactant, plus drift control agent where needed. Do not apply with liquid fertilizer. Consult your local Natural Resource Conservation Service office, County Extension Agent or a Corteva Agriscience representative for more details concerning proper timing.
5. For woody species, make sure the target plant has good foliage. Insects, hail, freezing weather or drought may damage plant foliage reducing your degree of control.
6. For Macartney rose, multiple treatments may be needed for control.

Broadcast Brush Applications

Brush Species	Herbicide	Product Per Acre	Time to Treat
Baccharis (willow)	GrazonPD3™ OR Surmount®	80oz/A OR 48oz/A	Apply in spring when leaves are fully expanded.
Blackberry	DuraCor + PastureGard® HL OR Chaparral™ OR GrazonNext HL + Remedy®	16 to 20 fluid oz/A + 16oz/A OR 3.3oz/A OR 32oz/A + 16oz/A	Apply to mature leaves, after fruit drop.
Blackbrush	Chaparral + Tordon 22K	3.3oz/A + 32oz	Apply late summer to fall, with mature leaves.



Broadcast Brush Applications			
Brush Species	Herbicide	Product Per Acre	Time to Treat
Catclaw acacia	GrazonNext® HL + Remedy®	24 to 32oz/A + 16oz/A	Optimum application time is May to July.
Dewberry	Chaparral™	3.3oz/A	Apply to mature leaves after fruit drop.
Bois d'arc	DuraCor® + Remedy® OR Surmount®	16 to 20 fluid oz/A + 16 to 32oz/A OR 64oz/A	Apply in summer when leaves are mature and fully expanded.
Buckbrush	Chaparral	3.3oz/A	Apply in spring immediately as leaves mature; add 1 lb/A of 2,4-D if later.
Chinese tallowtree	GrazonNext HL + Tordon® 22K OR Surmount	32oz/A + 32oz/A OR 80oz/A	Apply in the fall prior to or with less than 10% leaf color change.
Cholla cactus	Surmount	64oz/A	Apply anytime with good soil moisture.
Flameleaf sumac	DuraCor® + Remedy OR Surmount	16 to 20 fluid oz/A +16oz OR 80 to 96oz/A	Apply in late spring when leaves are mature.

Broadcast Brush Applications

Brush Species	Herbicide	Product Per Acre	Time to Treat
Honeylocust	Sendero OR Surmount	28oz/A OR 48 to 64oz/A	Apply in spring when leaves are mature.
Huisache	GrazonNext HL + Grazon P+D + Tordon 22K OR Sendero® + Tordon 22K	34oz/A + 72oz/A + 13oz/A OR 28oz/A + + 32oz/A	Apply in fall with good soil moisture. Apply with a NIS at 0.25%
Macartney rose	Chaparral + Tordon 22K	3.3oz/A + 32oz/A	Apply in spring or fall under good growth conditions and undisturbed plants.
Mesquite (honey)	Sendero	28oz/A	Apply in late spring or summer when leaves are mature with dark green foliage.
Mesquite (western honey)	Sendero + Remedy	28oz/A + 8oz/A	Apply in late spring or summer when leaves are mature with dark green foliage.
Pricklypear	MezaVue® OR Surmount	32oz/A OR 64oz/A	Apply in late summer or early fall. If heavy brush overstory is present, apply late winter/early spring before bud break.
Tasajillo	MezaVue	32oz/A	Apply anytime with good soil moisture.

Broadcast Applications with Spike® 20P Herbicide

Spike® 20P herbicide, a pelleted product, controls more than 100 woody species from the roots up, to provide long-term brush control and grass release.

Notes

Spike 20P kills shrubs and trees. Do not use near desirable species. Carefully read the label precautions before using. When the treatment site has more than 10% grass cover, apply Spike 20P during the dormant season to avoid grass injury. Grass stands can be reduced by high rates of Spike 20P, although they will recover as brush competition is eliminated.



Broadcast Applications with Spike® 20P Herbicide

Broadcast Application Timing

Plant Species	Recommended Time to Treat
Blackjack and Post Oak, Elm	Dormant Season
Blackbrush, Whitebrush	Dormant Season
Lotebush, Yaupon	Dormant Season
Creosotebrush, Tarbrush	Dormant Season
Sand Shinnery Oak	Dormant Season
Running Liveoak	Dormant Season
Catclaw Acacia, Catclaw Mimosa	Dormant Season
Black Locust	Dormant Season

HERBICIDE RATE

Read the label for recommended rates or contact your Corteva Agriscience™ representative

Broadcast Equipment

Spike® 20P herbicide pellets may be applied with airplane or helicopter equipment with a positive metering device. You may also apply it with a Solo backpack blower that can cover swaths up to 70 feet. For more details, talk with your Corteva Agriscience representative. You may also use Spike 20P to control individual trees or scattered stands of brush as well.

How Spike 20P Works

- Pellets adhere to soil and won't break down under sunlight and heat before water activates them.
- Spike 20P is then absorbed by the brush root system and moved up to leaves.
- By inhibiting photosynthesis, Spike 20P causes brush to defoliate slowly, turn brown and die, encouraging grasses to grow.
- Brush may refoliate and defoliate for up to two years, gradually depleting its food reserves.
- Brush is completely dead, roots and all.

Mow or Spray Brush

As a rule, mowing brush makes it more difficult to control with foliar herbicides. Mowing tends to increase a plant's rootstock and decrease foliage. Foliage is the gateway for the herbicide into the plant. With more foliage, more herbicide can be absorbed and translocated to the roots. With less foliage, less herbicide can be absorbed. Because mowing usually creates more rootstock to kill, and a smaller gateway to reach it, you get poorer control after mowing. This is true even when the foliar herbicide is applied several months after mowing, as the table below indicates. If you choose to spray regrowth from brush that's been mowed or shredded, wait until trees are 3 to 4 feet tall and shrubs or vines are at least 2 feet tall.

Notes

It's usually easier to control small, scattered brush than big, dense brush. And individual plant leaf sprays usually are the quickest and cheapest methods of individual plant treatment.

Effect of Mowing Prior to Spraying with Remedy® herbicide on Control of Blackberry/Dewberry Complex
(Remedy Applied at 32 ounces/A Plus Surfactant)

Mowing Date	Spraying Date	Number of Months After Mowing That Briars Were Sprayed	Percent Control
Not Mowed	August 4	Not Mowed	88
April 3	August 4, following year	17 months after mowing	72
June 27	August 4, following year	13 months after mowing	61
October 16	August 4, following year	9.5 months after mowing	63
February 3	August 4, same year	6 months after mowing	65
March 1	August 4, same year	5 months after mowing	66
April 1	August 4, same year	4 months after mowing	61
May 2	August 4, same year	3 months after mowing	50
June 1	August 4, same year	2 months after mowing	42
July 2	August 4, same year	1 months after mowing	17

Source: Dr. Bruce Pinkerton, Clemson University

Individual Plant Foliar Application Rates

The following table gives you a list of several choices available to control certain species. The cost and degree of control offered by the different tank mixes will vary, so it's important to talk with your Corteva Agriscience™ representative before you decide.

Notes

Do not apply more than 20 fluid ounces of DuraCor® herbicide, 1.75 pints of Sendero® herbicide, 4 pints of Remedy® herbicide, 96 ounces of Surmount® herbicide, 4 pints of PastureGard® HL herbicide, 2 pints of GrazonNext® HL herbicide, or 3.3 ounces of Chaparral™ herbicide per acre per year.

Important Tips

1. Observe and follow all label directions and restrictions.
2. Spray foliage until it glistens, but not to the point of runoff. Coverage is critical. For pricklypear, spray both sides of the pad.
3. To improve spray coverage, use 1 to 2 quarts of an approved agricultural surfactant per 100 gallons of spray mix.
4. Apply herbicides when environmental conditions are as close to optimum as possible. Consult your local Natural Resource Conservation Service office, County Extension Agent or Corteva Agriscience representative for more details concerning proper timing.
5. Make sure the target plant has good foliage. Insects, hail, freezing weather or drought may damage plant foliage, reducing your degree of control.



Individual Plant Foliar Application Rates

Mixing Chart For Individual Plant Foliar Treatments (Examples for Labeled Rate Range of 1 Quart to 1 Gallon/100 Gallons)

Amount of Herbicide Required at Specific Rate

Herbicide Concentration	1/4%	1/2%	3/4%	1%
Total Volume of Spray Mixture	1 Quart/ 100 Gallons	2 Quarts/Gallons	3 Quarts/Gallons	1 Gallon/ 100 Gallons
400 Gallons	1 Gallon	2 Gallons	3 Gallons	4 Gallons
100 Gallons	1 Quart	2 Quarts	3 Quarts	1 Gallon
50 Gallons	16 Ounces	32 Ounces	48 Ounces	64 Ounces
25 Gallons	8 Ounces	8 Ounces	24 Ounces	32 Ounces
14 Gallons	4.5 Ounces	9 Ounces	13.5 Ounces	18 Ounces
10 Gallons	3.2 Ounces	6.4 Ounces	9.6 Ounces	12.8 Ounces
5 Gallons	1.6 Ounces	3.2 Ounces	4.8 Fluid Ounces	6.4 Ounces
3 Gallons	1 Ounce	2 Ounces	3 Ounces	4 Ounces

Source: Dr. Bruce Pinkerton, Clemson University



Individual Plant Foliar Application Rates

Brush Species	Herbicide	Product Per 100 Gallons	Time to Treat
Baccharis (willow)	Surmount®	1 gallon	Apply in spring when leaves are fully expanded.
Blackberry	DuraCor® + PastureGard® HL OR Chaparral™	64 fluid oz/A + 1 gallon OR 6.6oz	Apply to mature leaves, before flowers or after fruit drop.
Bois d'arc	DuraCor® + Remedy® OR Surmount	64 fluid oz/A + 1 gallon OR 1 gallon	Apply in fall, with good moisture conditions.
Buckbrush	Chaparral	6.6oz	Apply in spring, immediately when leaves mature.
Burrobrush	Surmount	2 gallons	Optimum treatment time is April to July.
Chinese tallowtree	GrazonNext® HL OR Surmount	96oz OR 1 to 2 gallons	Apply in spring or fall.
Cholla cactus	Surmount	1 gallon	Apply in late summer through fall with adequate soil moisture.
Christ thorn	Remedy	1 gallon	Apply in early summer.
Common persimmon	Surmount	2 gallons	Apply in spring when leaves are fully mature.
Elm	Surmount®	2 gallons	Optimum treatment time is October to April.
Elm (winged or cedar)	Surmount	2 gallons	Optimum treatment time is October to April.
Flameleaf sumac	Surmount	1 to 2 gallons	Apply in late spring with mature leaves.
Honeylocust	Chaparral OR GrazonNext® HL OR Sendero®	6.6oz OR 96oz OR 1 gallon	Apply in spring when leaves are fully mature.
Huisache	Sendero® OR GrazonNext HL OR Surmount	1 gallon OR 96oz OR 1 to 2 gallons	Apply in fall with good moisture conditions.

Individual Plant Foliar Application Rates

Brush Species	Herbicide	Product Per 100 Gallons	Time to Treat
Juniper (ashe or redberry)	Surmount	2 gallons	Apply spot spray late winter through summer.
Macartney rose	Chaparral™ OR GrazonNext HL OR Surmount	6.6oz OR 96oz OR 2 gallons	Apply in spring or fall with good moisture conditions, undisturbed.
Mesquite	Sendero	1 gallon	Apply in late spring or summer when leaves are mature with dark green foliage.
Old Man's Beard	MezaVue®	1 gallon	Spray in late spring or fall with mature foliage.
Pricklypear, Tasajillo	MezaVue®	1 gallon	Apply anytime with good moisture and growing conditions.
South Texas Mixed Brush	Sendero + Surmount	1 gallon + 1 gallon	Apply at full leaf.



Individual Plant Basal Bark Applications

Two big advantages of stem sprays: little chance of drift, and effective any time of year. Stem sprays can be done as you have time, throughout the year. That helps you stay ahead of brush encroachment. Use a solution of 25% Remedy® herbicide in basal oil or diesel fuel.

Method 1: Low-Volume Basal Bark

Definition: Apply the herbicide solution to the entire circumference of the lower 12 to 15 inches of the target stem. Continue application until the bark is thoroughly wet, but not until the point of runoff.

Use: Control woody plants with smooth stems less than 6 inches in diameter. Effective year-round.

Method 2: Basal Cut-Stump

Definition: Spray the herbicide solution on the **freshly cut** surfaces of stumps. It's important to spray the entire exposed stump, particularly the cambium layer next to the bark of the cut surface.

Use: Stump treatments help provide control of the tree root system, especially suckering species. This control helps prevent sprouting and troublesome regrowth. You can make stump treatments at any time of the year.



Treatment Timing

Any time — optimum timing for stem sprays is in the growing season when the plant has mature leaves. Spring treatment works best.

Brush Species Controlled

Bacharras (Willow)	Blackbrush	Bois D'arc
Catclaw Acacia	Catclaw Mimosa	Chinese Tallowtree
Christ Thorn	Common Persimmon	Elm
Elm (Winged or Cedar)	Greenbriar	Hackberry
Honeylocust	Huisache	Lotebush
Mesquite (Honey)	Mesquite (Western Honey)	Retama
Russian Olive	Saltcedar	Texas Persimmon

Willow

Yaupon

Individual Plant Basal Bark Applications

Mixing Directions for 25% Herbicide Solutions

Total Volume (tank size)	25% Herbicide Mix	
	Remedy®	Basal Oil or Diesel Fuel
1 Gallon	1 Quart	3 Quarts
3 Gallons	3 Quarts	9 Quarts
4 Gallons	1 Gallon	3 Gallons
5 Gallons	1.25 Gallons	3.75 Gallons

Stem-Spray (Basal Bark) Application Rates

Treatment	Herbicide Mix
Low-Volume	25% Remedy® herbicide + 75% basal oil or diesel fuel
Cut-Stump	25% Remedy OR PastureGard® HL + 75% basal oil or diesel fuel



Individual Plant Whorl Sprays for Yucca and Palmetto

Species	Herbicide	Mix	Recommended Time to Treat
Yucca	Remedy® Herbicide	15% Remedy + 85% basal oil or diesel fuel. See mixing directions on next page.	Growing season. Using an adjustable cone nozzle (x1), spray a 2-second burst into the center of each individual whorl. Each yucca plant may have multiple whorls.
Yucca	Remedy	Undiluted	Growing season. Using an exact delivery handgun applicator, apply 2 ml. to 4 ml. of undiluted Remedy directly into the center of each plant whorl.
Yucca	Remedy	2% Remedy herbicide in basal oil or diesel fuel. See mixing chart on next page.	Anytime. Spray the center of each individual whorl of leaves to the point of runoff. Complete coverage of leaves is not necessary. The crown of each plant must be thoroughly wet with the herbicide mixture.
Palmetto	Remedy	25% Remedy in basal oil or diesel fuel. See mixing directions next page.	Anytime. Spray the center of each individual whorl of leaves to the point of runoff. Complete coverage of leaves is not necessary. The crown of each plant must be thoroughly wet with the herbicide mixture.

Mixing Directions For Yucca Spray With 15% Remedy® Herbicide in Oil		
15% Herbicide Mix		
Total Volume (tank size)	Remedy	Basal Oil or Diesel Fuel
1 Gallon	19 Fluid Ounces	109 Fluid Ounces
3 Gallons	58 Fluid Ounces	2.5 Gallons
4 Gallons	77 Fluid Ounces	3.4 Gallons
5 Gallons	3 Quarts	4.25 Gallons



Mixing Directions For Yucca Spray With 2% Remedy® Herbicide in Oil

2% Herbicide Mix		
Total Volume (tank size)	Remedy	Basal Oil or Diesel Fuel
1 Gallon	2.67 Fluid Ounces	125 Fluid Ounces
3 Gallons	8 Fluid Ounces	23.5 Pints
4 Gallons	10.5 Fluid Ounces	31.3 Pints
5 Gallons	13 Fluid Ounces	39 Pints



Mixing Directions For Yucca Spray With 25% Remedy® Herbicide in Oil

25% Herbicide Mix		
Total Volume (tank size)	Remedy	Basal Oil or Diesel Fuel
1 Gallon	1 Quart	3 Quarts
3 Gallons	3 Quarts	9 Quarts
4 Gallons	1 Gallon	3 Gallons
5 Gallons	1.25 Gallons	3.75 Gallons



Soil-Applied Spot Applications with Tordon® 22K Herbicide

For Best Results, Follow These Five Simple Steps:

1. Place the herbicide properly. This is the most important factor in spot application. For eastern red cedar, juniper (ashe or one-seed), common persimmon, honeylocust and bois d'arc: Place Tordon® 22K directly on the soil beneath the plant — between the trunk and the edge of the dripline. If the plant is growing on a slope, place the herbicide on the tree's upslope side. Apply the spots of liquid in a ring around the plant. Uniform distribution will help ensure more consistent control. If plant size requires more than a single 4 mL application, space subsequent applications equally around the plant. For juniper (redberry): Apply Tordon 22K to the stem base at or near the dripline.
2. Apply before rainfall and plant growth. Rainfall carries Tordon 22K down to the plant roots. When the plant uses water from the soil, the herbicide moves into the plant with the water.
3. Avoid applying in heavy clay soils. Soil characteristics may affect results. Heavy soils such as clays and clay loams — or soils with very high organic matter — may tie up Tordon 22K, preventing it from reaching the plant. The herbicide won't be as effective, so you may want to use a different control measure in these cases.
4. Keep away from desirable species. When working in and around areas where damage to desirable species cannot be tolerated, you should choose another method of control. Using a soil-applied herbicide may result in damage or even death to desirable plants because the roots of these plants will pick up the herbicide.

Notes

Eastern red cedar, juniper (ashe, redberry or one-seed), common persimmon, honeylocust and bois d'arc can be controlled with soil applications of Tordon 22K herbicide. Using a spot gun, you deliver a predetermined dose of undiluted herbicide directly to the soil surface, or for juniper (ashe or redberry), to the stem base at or near the dripline.

For videos demonstrating these techniques, please visit our website, RangeAndPasture.com.



UltiGrazSM Pasture Weed & Feed

One Pass, Better Grass.SM

How UltiGrazSM Pasture Weed & Feed Works

UltiGrazSM allows you to fertilize your grass not your weeds—Conveniently. Herbicide in a concentrated solution is sprayed on dry fertilizer granules during the blending process. The combined dry fertilizer and herbicide are applied through spreader trucks or fertilizer buggies similarly to how dry fertilizer alone would be applied. From there, rainfall moves the herbicide-fertilizer solution into the soil. Weed control is almost entirely dependent on the soil residual activity of the herbicide and root uptake of the weeds.

UltiGraz offers control of select broadleaf pasture weeds. Depending on application timing and weed species, weed control from UltiGraz Pasture Weed & Feed may vary from that of foliar applications.

Benefits

- Save Time and Extra Application Cost—It's One Trip
- Fewer Weather Delays
- Reduced Risk of Off-Target Movement
- No Spray Equipment Needed
- Apply through Spreader Trucks or Fertilizer Buggies
- Self-Apply on Your Schedule if
- Custom Application is not Available
- Fits Large and Small Operations
- Calibration Determined by Fertilizer Application

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LandVisor™ advanced brush management isn't just tech — it's a total solution. Make informed decisions about land management, including precision control of your mesquite and exactly when to treat problem vegetation.

Advanced Data and Image Technology

Advanced imagery with GIS technology and field data collection provide detailed information on forage productivity and vegetation, including density of desirable and undesirable plant species.

Industry Expertise

A Certified LandVisor Consultant partners with a Certified LandVisor Applicator and Corteva Range & Pasture Specialist to ensure proper timing and best-in-class herbicide treatments for your land.

Actionable Insights

Learn precisely where and when to spray your mesquite to unlock forage productivity and plant diversity on your land, maximizing your return on investment.

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Sendero® herbicide is covered by U.S. Patent No. 10,412,964 and other pending U.S. patent applications, international patents, and pending international patent applications.

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