



INDIVIDUAL PLANT TREATMENT GUIDE SOUTHERN VERSION



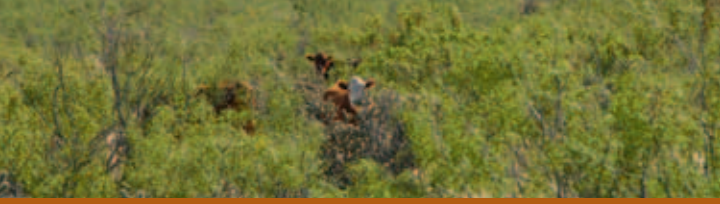
Range & Pasture



Dow AgroSciences

Solutions for the Growing World





Trees, shrubs and other brush seriously deplete pasture production. In addition, woody species weaken fences, reduce land values and slice cattle-carrying capacity. For every unique problem you may have with undesirable, encroaching brush, Dow AgroSciences offers an individual plant treatment plan that incorporates powerful, extensively researched products and application techniques proven to reverse these advances or, better yet, stop them before they take root.

SOUND ECONOMICS

At first, small, scattered brush may seem like a minor concern. But if that patch covers one-third of your pasture, you're losing at least one-third of the land's production potential. As those trees and shrubs grow each year, they tighten their grip on grazing capacity, forcing you to shorten the grazing season, buy more hay or overuse another pasture.

Besides making your cattle search for grass, brush can force you to spend a lot of extra time searching for your cattle. Then there's the wear and tear on your herd. Thorns can scratch eyes, puncture hides and cause foot problems. You can end up with lower gains and higher herd health costs.

Brush often creeps in from pasture perimeters. That means it usually gets started in fence lines. And at several thousand dollars per mile for materials and labor, you've got a lot invested in your fences. But a mess of brush can tear up a good four barb quicker than the neighbor's bull.

PROTECTING YOUR INVESTMENT

Stopping brush early and protecting your land, fences and cattle make good economic sense. Individual plant treatments cost just pennies per plant and provide easy, effective and, oftentimes, year-round options for control of the worst brush headaches in pastures and fence lines.



Remedy® Ultra, PastureGard® HL and Chaparral™ herbicides, for example, are excellent tools for pastures, hillsides and fencerows — areas where grasses play an important role in erosion control, livestock production or wildlife habitat. Unlike some herbicide options or mechanical methods, brush control herbicides from Dow AgroSciences are selective. They control the most troublesome woody species — including:

- Ash, blackberry
- Hedge (Osage orange, bois d'arc)
- Locust, cottonwood
- Dogwood
- Elms
- Multiflora rose
- Oaks
- Poison ivy
- Russian olive
- Sumac
- Willow

and many others — all while leaving grasses to flourish.

Individual plant treatments are selective, too. You control only the brush you treat. For example, you can selectively control undesirable species, such as honeylocust, yet leave other species to protect wildlife habitat or for aesthetic purposes. You also can use individual plant treatments to thin and maintain shelterbelts or riparian areas. In the treatment options that follow, you'll find methods suited to the type of brush you want to control, the spray equipment you likely already own and your pasture renovation goals. Some herbicides can be used in almost any type of spray equipment, from 1-gallon hand-held sprayers to large power sprayers used for broadcast application. ATVs also have become a popular tool for individual plant treatments.



THE RIGHT TOOL FOR THE JOB

Low-volume basal, cut-stump and some foliar applications require an oil-based carrier. Be sure pumps and hoses are resistant to oil-based carriers.

Wands and spray tips also should be chemical-resistant. Adjustable tips give you more control when making individual plant treatments.

Locust trees and other thorny species can be tough on tires, especially ATV tires. In these areas, a hand sprayer or backpack unit may be your best option. If you do use an ATV, consider adding a leak-stopping compound to each tire. Maintaining low air pressure (2 psi) also helps prevent punctures.

To clear dense, established brush, you'll want to go with a broadcast herbicide application. That likely means a visit to your local aerial applicator. However, individual plant treatments help you stop encroaching brush and clear light to moderate infestations before they get out of hand, or clean up any escapes following a broadcast treatment.



SPRAYING THE LEAVES

With the high-volume foliar (leaf spray) technique, you apply a solution of Chaparral, water and surfactant directly to a target plant's leaves and stems for the broadest spectrum of weed and brush control. It's ideal for small trees, vines or bushes with canes or stems, such as multiflora rose, blackberry or other low-growing shrubs.



Another option is a tank mix of Remedy Ultra plus GrazonNext® HL herbicides. To prepare small or large batches for high-volume foliar applications, follow the tables on the next page. Once applied, the herbicides translocate throughout the entire plant.

Plant Infestation Sizes

Light infestation	Fewer than 150 plants per acre
Moderate infestation	150 to 300 plants per acre
Dense infestation	More than 300 plants per acre

High-volume Foliar Tank-mixing Guide

Application: Spray enough of the herbicide mix to wet all leaves and stems from all sides of the plant. Including 1 quart of an approved agricultural surfactant per 100 gallons of spray mix will improve coverage. For large jobs, use an ATV-, tractor- or pickup-mounted sprayer or other power equipment. For small jobs, use a pump-up or backpack sprayer. If foliage is too tall to reach, you should use another control method, such as a basal treatment.

Chaparral™ herbicide plus surfactant

Sprayer size	Chaparral (oz.) ¹	Chaparral dry measure	0.25% surfactant
1 gallon	0.033 oz.	1/3 tsp.	1/3 fl. oz. (2 tsp.)
3 gallons	0.1 oz.	1 tsp.	1 fl. oz.
50 gallons	1.7 oz.	1 cup	1 pint

¹One teaspoon = 0.1 oz. of dry product

Remedy® Ultra plus GrazonNext® HL herbicides plus surfactant

Sprayer size	0.5% Remedy Ultra	0.25% GrazonNext HL	0.25% surfactant
1 gallon	2/3 fl. oz. (4 tsp.)	1/3 fl. oz. (2 tsp.)	1/3 fl. oz. (2 tsp.)
3 gallons	2 fl. oz.	1 fl. oz. (6 tsp.)	1 fl. oz.
50 gallons	1 qt.	1 pint	1 pint

Timing: For best results from foliar applications, apply when weeds, brush, vines and briars are actively growing. This is usually in the late spring, after plants fully leaf out, and through the summer when moisture and temperature conditions are favorable.

Precautions: Do not allow spray to contact desirable broadleaf plants and crops. Do not apply when conditions are conducive for spray drift.

Remedy® Ultra plus Chaparral™ herbicides plus surfactant			
Sprayer size	0.5% Remedy Ultra	Chaparral	0.25% surfactant
1 gallon	2/3 fl. oz. (4 tsp.)	1/3 tsp.	1/3 fl. oz. (2 tsp.)
3 gallons	2 fl. oz.	1 tsp.	1 fl. oz.
50 gallons	1 qt.	1 cup	1 pint

PastureGard® HL herbicide plus surfactant		
Sprayer size	0.5% to 1% PastureGard HL	0.25% surfactant
1 gallon	2/3 to 1 1/3 fl. oz.	1/3 fl. oz. (2 tsp.)
3 gallons	2 to 4 fl. oz.	1 fl. oz.
50 gallons	1 to 2 qt.	1 pint

TREATING ALL AROUND THE TRUNK

Low-volume basal applications are another convenient option. This method works on trees that are too tall for foliar control. It also gives you a way to improve your pastures during the fall and winter. It used to be that straight kerosene was used in basal applications. Results were limited. Today, PastureGard HL or Remedy Ultra herbicide makes basal applications a more effective strategy.



This method uses a high percentage of herbicide, so you don't need a large amount of spray volume. Generally, the mix ratios include the herbicide plus an oil-based carrier. When preparing an oil-based spray mixture, use either diesel fuel, No. 1 or No. 2 fuel oil, kerosene or a commercially available basal oil. Use low-volume basal applications to control woody species with trunks less than 6 inches in diameter at the base of the tree. Spray the herbicide mixture lightly but evenly (think spray-painting) on the lower 12 to 15 inches of the trunk on all sides, including the root collar area and any exposed roots — but not to the point of runoff. Use this method any time of year, unless snow or water prevents spraying to the groundline.

Tank-mixing Guide — Low-volume Basal/Cut-stump Applications for Broad-spectrum, Year-round Brush Control

PastureGard® HL or Remedy® Ultra herbicide

Sprayer size	25% PastureGard HL OR Remedy Ultra	75% oil-based carrier
1 gallon	1 qt.	3 qt.
3 gallons	3 qt.	9 qt. (2¼ gal.)
50 gallons	12½ gal.	37½ gal.

Cooler weather and a lighter workload make the fall and winter a good time to control brush. Without the obstruction of leaves and weeds, you can more easily treat the base of the woody plant. And come next spring, pastures will get off to a better start.



When using a backpack sprayer, consider having separate backpacks for your oil-based and water-based herbicide solutions. This will ensure there is no residue left from an oil-based treatment if you're making a foliar application from the same backpack at a later time. It's also important to ensure that your basal bark/cut-stump backpack is

equipped with oil-resistant seals to prevent leaks and extend the life span of the sprayer. Use a spray wand with a shutoff valve at the tip to avoid wasting the mixture.

CUT IT DOWN, KEEP IT DOWN

Mechanically controlled brush quickly resprouts thicker and heartier than before. But you can control the stump for good with PastureGard HL, Remedy Ultra or Tordon® RTU herbicide.

Simply apply a solution of 25 percent of either PastureGard HL or Remedy Ultra plus 75 percent oil-based carrier to the cut stump. Spray the sides of the stump and the outer portion of the cut surface, including the cambium ring along the inner bark. Wet the stump and root collar area and any exposed roots — but not to the point of runoff.

If you prefer the convenience of a ready-to-use product, apply Tordon RTU straight

out of the convenient squeeze bottle to the outer portion of the cut surface, including the cambium ring. Its no-freeze formulation keeps Tordon RTU flowing freely, and its blue dye helps you easily keep track of treated stumps.

To quickly move through brush patches, diversify your plan. Just grab your chain saw and hand sprayer. Basally treat brush with trunks smaller than 6 inches. Cut down larger trees and spray the stumps or treat with Tordon RTU. You can use either method any time of year, as long as snow or water doesn't prevent proper application.



Cut-stump application

STOPPING CEDARS ON THE SPOT

In certain cases, soil spot applications are the best way to treat individual plants. For example, you can make quick work of eastern redcedar with this method. Apply undiluted Tordon 22K herbicide with a spot gun (an old syringe will do), which automatically premeasures the amount of herbicide you use. Apply 3 to 4 milliliters (1 mL = 1 cc) per 3 feet of tree height within the dripline in a ring



Eastern redcedar

around the plant. For a 9-foot cedar tree, you'll need 9 to 12 milliliters of Tordon® 22K herbicide. Even distribution around the tree improves results except on uneven ground, where you apply the herbicide to the upslope side of the tree. Because soil-applied herbicides require rainfall to move

them to the roots, apply Tordon 22K when rain is expected, generally during the spring or fall. However, avoid application to already-saturated soil.

Soils with heavy clay content or high organic matter may bind to the herbicide and prevent Tordon 22K from reaching the roots. Another precaution is that nearby desirable plants could absorb some of the herbicide through their root systems. Use other control methods when soil type might limit effectiveness or when damage to desirable plants is a concern.

Control blueberry cedar (ashe juniper) and redberry cedar (juniper) by spraying the foliage with a label-recommended solution of 1 percent Tordon 22K and 0.25 percent surfactant mixed in water. So, for a 3-gallon sprayer, add 4 fluid ounces ($\frac{1}{2}$ cup) of Tordon 22K, 1 fluid ounce (6 tsp.) of surfactant and fill with water. Add a dye to the mix to mark trees as you treat. Because the spray mix must thoroughly cover all of the foliage, this method is effective on cedars less than 8 feet tall. Because of the cedar's dense foliage and the amount of spray mix required, this method is most cost-effective on cedars less than 3 feet tall.



Redberry cedar (juniper)



Blueberry cedar (ashe juniper)



LOOK TO DOW AGROSCIENCES FOR SERVICE AND STEWARDSHIP.

Dow AgroSciences is committed to you, our industry and the environment. Here are three examples:

Responsible Care®

The Responsible Care® program is a voluntary initiative within the global chemical industry to promote the safe handling of chemical products — from inception in the research laboratory through production, use and disposal.

Spray Drift Task Force

Dow AgroSciences is a charter member of the Spray Drift Task Force, formed to provide spray drift data to the U.S. Environmental Protection Agency (EPA).

Environmental Stewardship Award Program

We're proud to co-sponsor this program from the National Cattlemen's Beef Association (NCBA). This award recognizes cattlemen whose natural resource stewardship practices contribute to the environment while enhancing productivity and profitability.



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Label precautions apply to forage treated with Chaparral or GrazonNext HL and to manure from animals that have consumed treated forage within the last three days. Consult the label for full details.

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