

PASTURE WEED & BRUSH CONTROL

Control Methods

There are several methods to control weeds and brush including cultural, mechanical, biological and chemical. These methods can be used alone or in most cases in combination with each other.

Cultural methods are basically management practices that promote a vigorous, healthy stand of the desired forage. They include proper forage variety selection, good fertilization practices, maintaining an adequate pH and good harvest management, whether by grazing or haying. Soil testing to insure the soil pH, phosphorus and potassium levels are adequate for the forage species is essential.

Mechanical control most often refers to mowing or brush hogging. In combination with other control methods such as good fertilizer and liming practices and herbicides, mowing can be an effective tool in weed and brush management. When used alone, mowing hides a problem but rarely gives good control. Mowing brush like sumac, hedge (Osage Orange) or honey locust can actually make the problem worse. A person can gain slow control over blackberries by timely mowing; namely, from full leaf to blossom in the spring. Even with proper mowing, one should expect control to take several years to make meaningful progress. A late-season mowing of blackberries or other species of brush is only cosmetic and will give no long-term control.

Biological control can be used to control targeted weed species. The targeted species in southwest Missouri is the musk thistle. The introduction of the musk thistle head and rosette weevils has been very effective in reducing the population in Southwest Missouri.

Chemical control involves the use of selective herbicides, and generally provides the most effective control of troublesome weeds once they have become established. Before using any herbicide, read and follow label directions to determine appropriate rates, carrier volume and spray additives. Caution: The herbicides listed are safe on most grasses when used at labeled rates but will kill or injure legumes in a mixed (grass/legume) pasture. **READ AND FOLLOW ALL LABEL DIRECTIONS!**

Application

With any application method utilizing a sprayer, be sure to take the time to calibrate the sprayer and ensure that the sprayer is in good working condition. Directions for calibrating boomed and boomless sprayers are available.

Surfactants are often recommended by the herbicide manufacturer and will be clearly stated on the label if needed. These products may help the herbicide to have better coverage of on leaf surface and reduce surface tension of the water they are sprayed in. The most common surfactant recommended is a non-ionic surfactant. The use of ammonium sulfate is also recommended when using glyphosate, which takes hardness out of the water used in the spray.

Foliar broadcast is the use of a boom type sprayer, boom-buster nozzle, airplane, or helicopter to treat larger weed infestations. Herbicides are usually mixed with water.

With the foliar broadcast, good coverage is essential. Generally, a spray volume of 15 to 20 gallons per acre by ground or 3 to 10 gallons per acre by air is desirable. Check the herbicide label for recommended spray volumes. Foliar applications may not be effective if plants are under stress from drought or other conditions. Do NOT use diesel as a carrier with foliar applications.

Spot treatment is treating the foliage of individual plants or small areas of infestation. It is usually accomplished with a hand sprayer or handgun. Thorough coverage is essential with many species and herbicides and some desirable vegetation can be damaged if contacted by the spray.

Basal bark treatment is applying herbicide to the lower 12 to 18 inches of the trunk. This type of treatment works best on trees 6 inches or less in diameter. Herbicides will be mixed with oils or diesel and applied until bark is saturated.

Cut stump is the application of herbicide to the freshly cut surface of the brush or tree. Apply treatment immediately after cutting for maximum effectiveness. On trees larger than three inches in diameter, only the outer cambium layer next to the bark will need to be treated.

Selected Species

Timing of application is crucial for successful control. Refer to Table 3 for a calendar of best times to control specific weeds. The following scenarios are based on experience and do not include all possible treatments. Refer to Tables 1 & 2 for herbicides and restrictions, respectively. *University of Missouri does not endorse any one product. Trade names are used for ease of reference. Read and follow all label directions.*

Thistles (Musk, Bull, Tall) – Cimarron, Cimarron Max, Banvel, Grazon P+D, Milestone, GrazonNext and Tordon 22K have provided good results. If application is made during the rosette stage of growth (fall or early spring), 2,4-D gives good control but offers no residual activity. Do not spray thistles after flower buds begin to develop. At that stage, leave control to the musk thistle weevil.

Chickweed – Use 2,4-D or Grazon P+D, or combination of 2,4-D + dicamba in the fall or Grazon P+D in the early spring

Henbit – Use Banvel/Clarity or GrazonNext HL in the fall or early spring.

Poison Hemlock – Use Tordon 22K (1 pt/A), Remedy Ultra, Grazon P+D (1 qt/A) or Cimarron before it bolts in the early spring. They may also control it in the fall in the rosette stage.

Spotted Knapweed – Use Milestone (5-7 oz/A), Chaparral (2.5-3.3 oz/A), Tordon 22K (1 pt/A) or Grazon P+D (2 qt/A) in the rosette to bud stage. Treat before it gets 12" tall.

Plantain (Broadleaf, Buckhorn, Bracted) – Use 2,4-D ester, Grazon P+D (1 qt/A) or GrazonNext HL in the fall or early spring.

Buckbrush – Spray plants before leaves reach full size, typically mid to late April. Herbicides effective include Chaparral, Cimarron (0.4 oz/A or 1 oz/100gal), the various forms of 2,4-D (1-2 qt/A or 2% v/v mix) and other formulations containing 2,4-D.

Perilla Mint – Use 2,4-D, Grazon P+D or Remedy Ultra while actively growing.

Blackberry / Dewberry – Foliar applications of Cimarron (0.5 oz/A or 1 oz/100gal), PastureGard (4 pt/A) and Remedy Ultra (1-2 pt/A or 1% v/v mix) combined with 1 qt/A of 2,4-D ester have given good results. Good results have been found with 1 pt/A Remedy Ultra tank mixed with 1 qt/A Grazon P+D. MU research has found that late-summer to early-fall spray works best. Cimarron performed well post-fruit drop and PastureGard performed well at mid-flower. Canes should have two or more years of growth. Spraying one year will not give good control of blackberries. It generally takes three or more applications to get adequate control.

Honey Locust – Foliar applications of GrazonNext HL, Surmount, Tordon 22K, Grazon P+D (1-2 qt/A or 2% v/v mix) mixed with Remedy Ultra or Surmount gives best control of small sprouts. Total coverage of the leaves is essential. Multiple mowing (3 to 4 per year over several years) can give acceptable levels of control. For larger trees, basal bark treatments with Pathfinder II or cut stump treatment with Tordon RTU give acceptable levels of control to smaller trees.

Horsenettle (Bullnettle) – Tordon 22K (1 pt/A) or Grazon P+D (1 qt/A) have given best results on the control of horsenettle. Perennial weed and prolific seed producer.

Osage Orange (Hedge) – Remedy Ultra is somewhat effective as a foliar treatment. Best control may be achieved with basal bark treatments of Pathfinder II or cut stump treatments with Tordon RTU. Double girdling the tree near the base about an inch deep and then treating the girdled area with Tordon RTU or Pathfinder II can be effective.

Oaks – Use Remedy Ultra when oaks are actively growing after new leaves have expanded in the spring. May be difficult to control.

Sassafras – Very difficult to control. Use Remedy Ultra as basal treatment. Tordon 22K will do a fair job as a foliar treatment. Another good option is a Grazon P+D and Remedy Ultra combination.

Persimmon – Use Surmount, Grazon P+D or Tordon 22K in May or early June. Surmount is a preferred product for this species. Very difficult to control.

Sumac – Use Crossbow or Remedy Ultra when actively growing. 2,4-D works well if applied early.

Red Cedar – Although a few herbicides have been used to control red cedars, the most common and cost effective means of control are cultural or mechanical. Because the bark is very thin, red cedar is extremely sensitive to fire. Prescribed fires are the easiest and most cost-effective control method for red cedar. Small trees are killed if enough fuel surrounds the tree. For trees larger than three feet in height, any form of cutting below the lowest branch, girdling or removing all of the needles will kill the tree. Tordon 22K may work well on cedars smaller than four feet.

Sericea Lespedeza – PastureGard (2 pt/A), Cimarron(0.4 oz/A or 1 oz/100 gallons of spray solution) and Remedy Ultra (1-2 pt/A or 1% v/v mix) are recommended for control of sericea lespedeza. PastureGard has shown very consistent control in test plots. Apply to 12 or more inch plant (usually June). May also apply from bud to flowering in late August to early September. Do not apply if sericea is under drought stress. Seed in the ground can make it a perennial problem for a few years.

Spiny pigweed (Amaranth)—Use a 2,4-D plus Banvel /Clarity or Grazon P+D (1 qt/A). Residual activity of Grazon P+D keeps the remaining seeds from sprouting that year.

Multiflora Rose - For a broadcast application, spray Tordon 22K (1 pt/A). Spot treat with a 1% solution of Remedy Ultra, Tordon 22K or PastureGard when in full bloom. Soil treatment with Spike pellets.

Tall Ironweed - Spray PastureGard or Remedy Ultra. Some control can be achieved with Grazon P+D (2-3 pt/A) or Tordon 22K (1 pt/A) just prior to or at bud stage and control will be enhanced with the addition of Remedy Ultra.

Prickly Pear Cactus – Use Surmount (2-3 pt/A) or Tordon 22K. Effectiveness of the treatment may be enhanced if the leaf surface area is damaged by mowing or running a light harrow over the plant prior to treatment. Some labels prefer a fall treatment. Flowering is another good time to treat.

Johnsongrass – Selective herbicide options on grass pastures don't exist. Glyphosate works well on johnsongrass when it is actively growing and not stressed but will destroy the forage stand. To protect desirable grass species and legumes, use a weed wiper. A Glyphosate burndown application followed by reestablishment of the pasture may be the best option.

Effective control of many pasture weed species such as pigweeds, common and giant ragweed, asters, cocklebur, plantains, bitter sneezeweed and woolly croton may be achieved with 2,4-D if applied during good conditions for weed control.

For more information on identification and/or control of specific pasture and hay weeds contact University of Missouri Extension.

Below are recommended MU Guides that can be obtained through MU Extension Centers:

G4852 Cleaning Field Sprayers to Avoid Crop Injury

G4970 Plants Poisonous to Livestock

IPM 1010 Biological Control of the Musk Thistle in Missouri

M 169 A Guide to the Common Forages and Weeds of Pastures

MP581 Weed and Brush Control Guide for Forages, Pastures and Non-Cropland

This guide is taken from “Pasture Weed and Brush Control” authored by Kevin Bradley, Tim Schnakenberg, Jay Chism, John Hobbs, and Brie Menjoulet and updated version includes: Pat Miller, Jill Scheidt and Sarah Kenyon.

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