Chemical Weed Control in Forage Legumes

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Chemical Weed Control in Forage Legumes

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Vigorous forage plants are good weed competitors. Good seed, proper seedbed, and good planting techniques will reduce weed problems in new legume seedings. Herbicides are an aid to recommended fertilization and proper grazing or haying practices.

Herbicide Suggestions. Information in this publication is based on research conducted by the South Dakota Agricultural Experiment Station and other research or observations. Herbicides are included only after the chemical is registered by the Environmental Protection Agency (EPA) as to residue tolerances in crops used for food or feed.

This information provides a summary of herbicide uses and does not imply a guarantee or responsibility for results. Tradenames are for reader convenience and do not imply product endorsement. Users are responsible for following label direction and precautions.

Most herbicides are listed by tradename except where the active ingredient is available in several products. The common name (in parentheses) follows the first listing of the tradename. Product labels for the same active ingredient may vary. Users should consult the label of the product.

Rates for each treatment and each formulation are stated as the amount of product per acre. Weed control is rated poor, fair, good, very good, or excellent for each weed problem in each crop.

Herbicide Cost. The table gives the cost per acre for several herbicide treatments using suggested retail prices. The costs listed are for the low and high rates. Prices vary according to location or quantity and frequently are somewhat less than shown. Consult your local dealer for actual prices.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Amt. Product</th>
<th>Herbicide Cost/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balan 1.5L</td>
<td>3-4 pt</td>
<td>$ 6.40-8.55</td>
</tr>
<tr>
<td>Buctril 2L</td>
<td>1-1.5 pt</td>
<td>5.10-7.70</td>
</tr>
<tr>
<td>Butoxone 1.75L</td>
<td>2-2.6 pt</td>
<td>5.20-15.55</td>
</tr>
<tr>
<td>Butyrate 200 2L</td>
<td>2-4 pt</td>
<td>5.70-11.40</td>
</tr>
<tr>
<td>Butyrate Ester 2L</td>
<td>3-4 pt</td>
<td>11.25-15.00</td>
</tr>
<tr>
<td>Chem Hoe 4L</td>
<td>1.25-1.5 gal</td>
<td>15.00-18.00</td>
</tr>
<tr>
<td>Diquat 2L</td>
<td>2.5-4.5 pt</td>
<td>8.75-17.50</td>
</tr>
<tr>
<td>Eptam, Genep 7L</td>
<td>1-3 qt</td>
<td>7.05-21.15</td>
</tr>
<tr>
<td>Furfacil 4L (CIPC)</td>
<td>1.5-4 lb</td>
<td>21.00-56.00</td>
</tr>
<tr>
<td>Kerb 50W</td>
<td>1.25-3 pt</td>
<td>12.05-30.15</td>
</tr>
<tr>
<td>Prowl 4E</td>
<td>1-2.5 pt</td>
<td>3.10-7.70</td>
</tr>
<tr>
<td>Roundup 3L</td>
<td>.5-1.5 qt</td>
<td>9.55-27.00</td>
</tr>
<tr>
<td>Sencor, Lexone 4L</td>
<td>.5-1.5 lb</td>
<td>10.10-33.20</td>
</tr>
<tr>
<td>Sinbar 80W</td>
<td>1-2 pt</td>
<td>3.25-6.55</td>
</tr>
</tbody>
</table>

ABBREVIATIONS USED

pt = pint
qt = quart
lb = pound
gal = gallon
gpa = gallons per acre
lb/gal = pound per gallon active ingredient or acid equivalent
L = liquid
W = wettable powder
G = granule
DF = dry flowable (spray)
act = active ingredient or acid equivalent
SP = soluble powder

FOLLOW THE LABEL

Federal regulations make it unlawful for any person to use an herbicide in a manner inconsistent with its labeling. This includes the kind of crop and weed; rate, carrier and other application directions; storage, disposal, and protective clothing; or other precautions stated.
HERBICIDES FOR ESTABLISHED LEGUMES

Established legumes usually compete effectively with most annual weeds. Weeds take over in thin, weak legume stands. Winter annuals such as pennycress or downy brome become a problem when fall conditions are favorable for their establishment. Perennials such as dandelion or perennial grasses often persist in spite of legume competition.

Controlling weeds does not improve the legume stand and frequently does not increase total forage production. However, weed control will usually improve protein percentage and palatability of harvested forage. Drying time may be reduced.

Weed control has greatest value if there is a premium value for high quality, pure legume forage. Weed control in seed fields reduces cleaning problems and yields a higher quality seed. Wear on harvesting and cleaning equipment is reduced.

Sencor or Lexone (METRIBUZIN)

1-2 pt Sencor 4L or .66-1.33 lb Sencor 75DF or .75-2 pt Lexone 4L or .5-1.33 lb Lexone 75DF (.38-1 lb act)

Alfalfa and sanfoin only. Use on stands established at least one year. May be used on mixed alfalfa and grass stands; however some injury to grasses should be expected. Higher rates may cause severe damage to forage grasses.

Sencor and Lexone contain the same active ingredient. Metribuzin gives good to excellent control of many annual and some biennial or perennial weeds including kochia, shepherd's-purse, tansy mustard, blue mustard, and downy brome ("cheatgrass"). Excellent downy brome and very good kochia and mustard control in SDSU tests. Dandelion control has been fair, but variable. Seeding dandelion control is very good.

Crop tolerance is good. There is some risk of injury with high rates on light soil. There are no pH limitations; however, field reports indicate there is increased risk of injury on very high pH soil. Rates of 1.33 to 1.5 pt/A of 4L or .75 to 1 lb/A of 75DF are suggested for annual broadleaved weeds on most soils.

Sencor rates vary according to weed species. Most weeds require 1 to 2 pt/A of 4L or .66 to 1.33 lb/A of 75DF formulation. The low rate (.5 lb/A active) is adequate for downy brome. Use the high rate (1 lb/A active) for bluegrass, barnyardgrass, or dandelion.

Lexone rates vary according to soil type. Most soils with over 2% organic matter require 1 to 2 pt/A of 4L or .66 to 1.33 lb/A of 75DF formulation. The low rates (.38 to .5 lb/A active) are for sandy soil with 1 to 2% organic matter. High rates (over .75 lb/A active) are for clay and clay-loam soils with over 2% organic matter.

Minimum carrier for Lexone is 10 gpa for ground and 2 gpa for air; minimum for Sencor is 20 gpa for ground and 2 gpa for air. Do not graze for 28 days after treatment. Alfalfa, corn, forage grasses, and soybeans may be planted 4 months after application. Other crops may be planted 18 months after application.

FALL OR SPRING APPLICATION: Apply in late fall after cutting when fall growth has ceased or in early spring before growth begins. Fall application strongly preferred; however, early spring applications have provided excellent downy brome control. Active legume growth at the time of application will be damaged.

Kerb (PRONAMIDE)

1.5-4 lb Kerb 50W (.75-2 lb act)

Alfalfa, clover, birdsfoot trefoil, crown vetch, and sanfoin. Perennial grasses will be killed. For established pure legume stands for new seedings after legume seedlings have reached the trifoliate leaf stage. Primarily for controlling annual and perennial grasses. Effective as a preemergence or early postemergence treatment for annual grasses. Control of annual grasses such as downy brome ("cheatgrass") and perennial grasses such as bluegrass has been very good. Quackgrass control is fair to good. Competition from dense alfalfa stands is helpful for perennials. Broadleaved weeds such as kochia or dandelion are not controlled.

Use 1.5 to 2 lb/A Kerb 50W for downy brome and other annual grasses, 2 to 3 lb/A for perennial bluegrass, or 3 to 4 lb/A for more tolerant perennial grasses such as quackgrass or bromegrass. The high rate may give control of broadleaves such as mustard. Use the lower rate if overhead irrigation is used to activate the herbicide. Weed control is dependent on rainfall or irrigation after application to move the herbicide into the soil.

Crop tolerance is excellent. No soil texture or pH limitations. High soil temperature (over 65 degrees F) may reduce effectiveness.

Minimum carrier is 20 gpa for ground and 5 gpa for air. Treated alfalfa should not be grazed or harvested for forage for 25 days if less than 3 lb/A or 45 days if more than 3 lb/A is used. Other crops should not be harvested or grazed for 120 days after treating. If the alfalfa stand is lost, small grain should not be planted in the spring after a fall application.
FALL APPLICATION: Apply in late fall before freeze-up, usually in early to mid-October. Excessive residue should be removed or dispersed. Emerged downy brome and other annual grasses will usually be controlled.

SPRING APPLICATION: Kerb may be applied in the spring for downy brome control. Apply 1.5 to 2 lb/A Kerb 50W in early spring at the time weed seeds germinate. Fall application usually preferred.

Sinbar (TERBACIL)

.5-1.5 lb Sinbar 80W (.4-1.2 lb act)

Alfalfa only. Use on pure stands established at least one year. Perennial grasses may be injured or killed. Good to excellent control of many annual weeds including lambsquarters, tansy mustard, pennycress, peppergrass, downy brome ("cheatgrass"), and foxtail. Fair suppression of dandelion has been noted in SDSU tests. Perennial or established annual weeds are not controlled. Grasses will be damaged.

Crop tolerance is good on most soils. Sinbar is less sensitive to soil variation than some other treatments. Avoid use in very sandy, gravelly, low organic matter (under 1%) soil.

Rates of 1 to 1.5 lb/A Sinbar 80W have been used in most SDSU tests. Minimum carrier is 40 gpa for ground application. Sinbar persists in the soil. Do not plant treated areas to other crops for 2 years after application.

Treflan (TRIFLURALIN)

1.5-2 pt Treflan 4L or 20 lb Treflan 10G (.75-2 lb act)

Alfalfa only. Use on pure stands established at least one year. Provides good to excellent control of foxtail, barnyardgrass, and sandbur. Established annual bromes ("cheatgrass") will be destroyed if mechanical incorporation is used in spring. New seedings have fair to good tolerance to 1 to 1.5 pt/A Treflan 4L, however labeling does not include new seedings intended to be harvested for forage in the seeding year.

Excellent crop tolerance. Use has been primarily in seed fields. Major concern is injury to crowns during incorporation. Liquid must be mechanically incorporated with 24 hours or may be applied via chemigation. Granules are activated by 1/2 inch of rain or overhead irrigation within 3 days of application or by mechanical means. A disk or field cultivator may be used. The program works well where alfalfa is planted in rows and row cultivation is used to incorporate.

Rates are 1.5 to 2 pt/A Treflan 4L or 20 lb/A Treflan 10G. Incorporation required. Rainfall is required within 3 days for surface granules. Rate of 2 qt/A may be used for application through irrigation systems. Minimum carrier for spray is 5 gpa for ground or aerial application.

Furloe (CIPC)

1-3 qt Furloe or 20 lb Furloe 20G (1-3 lb act)

Alfalfa, birdsfoot trefoil, red and white clover. For established pure legume stands or new seedings after legume has four true leaves. Primarily for downy brome ("cheatgrass"), and a few annual broadleaves such as smartweed and wild buckwheat. Granules are used in some states for dodder control. Rainfall or irrigation soon after application required for good results. Short-term residual control. Very good crop tolerance. Limited tests.

Rates vary according to time of application. Use lower rates on light, low organic matter soils. No soil pH limitations. Minimum carrier is 20 gpa for ground application.

Do not graze or feed forage from treated area within 40 days after application.

FALL OR EARLY SPRING APPLICATION. Apply 1 to 2 qt/A Furloe in late fall before freeze-up or 2 to 3 qt/A in early spring. Alfalfa may be actively growing or dormant. Use 2 qt/A on legumes other than alfalfa. Granules are applied in spring just before dodder germinates.
Des-i-cate (ENDOTHALL)

1.25-1.5 gal Des-i-cate .52L (.6-.75 lb act)

Alfalfa and clover. Harvest-aid dessicant for seed fields. Crop may be combined 5 to 10 days after application. Activity is greatest under high temperature. For aerial application use 1.25 gal/A in 8.5 gal water per acre for medium stands or 1.5 gal/A in 8 gallons per acre for heavy stands. A split application of .75 to 1.25 gal/A in 8.5 to 9 gal water per acre each time at a 3- to 5-day interval will provide the best results in very heavy stands. For ground applicator, use the same rate but increase water to 15 to 20 gal/A. Contact herbicide.

Diquat (DIQUAT)

1-2 pt Diquat (.25-.5 lb act)

Alfalfa and clover. Harvest aid dessicant for seed fields. Dessication is complete 3 to 10 days after application. Less effect on mature weeds than on young weeds. Temperature has little effect on performance. Good choice during cool weather.

Contact herbicide. Use 1.5 to 2 pt/A Diquat for most situations. Rate of 1 pt/A satisfactory for thin alfalfa stands. Good coverage important. Minimum carrier is 15 gpa for ground and 5 gpa for air. Avoid drift. Do not graze or feed treated forage.

Poast (SETHOXYDIM)

1-2.5 pt Poast 1.5L (.2-.5 lb act)

Alfalfa. Pure stands. Grass will be killed or damaged. More for use in new seedings than in established stands.

Control of annual grasses such as green and yellow foxtail is very good to excellent. Gives partial to fair control of quackgrass. Annual grasses that have been cut are not controlled as well as new seedlings. Quackgrass in established stands is more difficult to suppress than new growth in new seedings.

Rates are 1 pt/A for foxtail (3-8 inches). Use 2.5 pt/A for quackgrass (6-8 inches) and repeat the application.

POSTEMERGENCE. Apply using the rate specified for the weed.

Butoxone, Butyrac (2,4-DB)

4.33-6.5 pt Butoxone-1.75 lb/gal or 2-6 pt Butyrac 200-2 lb/gal or 3-4 pt Butoxone Ester or Butyrac Ester-2 lb/gal (.5-1.5 lb act)

Alfalfa, birdsfoot trefoil, red or white clover for amine (Butoxone, Butyrac 200) forms and alfalfa or birdsfoot trefoil for ester (Butoxone Ester) forms.

For postemergence weed control in pure legume stands. Primarily for treating patches of problem weeds. Seedling annual broadleaves such as lambsquarters, cocklebur, wild mustard, pigweed, and pennywort are most susceptible. Ragweed, smartweed, shepherd's-purse, and tansy mustard usually require the higher rates. High rates will suppress topgrowth of perennials such as Canada thistle. Not effective on established dandelion or kochia.

Some crop effects can be expected. Stem twisting and leaf malformation are usually noted. Use only the low rate on red clover. Do not treat when crop is under stress or if expected high temperature exceeds 90 degrees F.

Minimum carrier is 5 gpa for ground or air with Butyrac Ester; 20 gpa for ground and 10 gpa for air with Butoxone and Butoxone Ester; and 10 gpa for ground and 5 gpa for air with Butyrac 200. Do not graze or harvest forage from treated areas for 30 days after applying.

FALL OR SPRING POSTEMERGENCE. Apply when weeds have emerged and are actively growing. Weeds should be less than 1 to 2 inches tall for best results.
HERBICIDES FOR LEGUME ESTABLISHMENT WITHOUT COMPANION CROP

Seeding without a companion crop and using an herbicide to control weeds is an option if the small grain crop, weeds, or levels of moisture make it difficult to establish a new seeding. Two cuttings the seeding year are usually possible with irrigation.

**Balan (BENEFIN)**

3-4 qt Balan 1.5L (1-1.5 lb act)

Alfalfa, birdsfoot trefoil, red clover, and ladino clover. For new legume seedings without companion crop. Do not use if grass is seeded with legume. Very good to excellent control of most annual grasses and very good control of several annual broadleaves. Balan is weak on smartweed, ragweed, and mustard. Established perennials are not controlled.

Crop tolerance is good. No soil pH limitations. Rate of 3 qt/A Balan has been satisfactory in most SDSU tests. Use the lower rate on light and medium textured soils and the high rate on heavy, clay soil.

Minimum carrier is 5 gpa for ground equipment. May be applied in liquid fertilizer carrier.

PREPLANT INCORPORATED. Apply before planting to a smooth, dry seedbed. Incorporate with a tandem disk set to cut 4 to 6 inches deep or a field cultivator equipped with sweeps. Immediate incorporation preferred but may be delayed up to 8 hours if the soil is dry and wind velocity is under 10 mph. A second incorporation insures thorough mixing, especially under wet, lumpy, or trashy conditions. Follow with a harrow or mulcher to level and firm the seedbed.

**Eptam or Genep (EPTC)**

2.25-4.5 pt Eptam or Genep 7L (2-4 lb act)

Alfalfa, birdsfoot trefoil, and clovers. For new legume seedings without companion crop. Do not use on white clover. Do not use if grass is seeded with legume. Gives excellent control of several annual grasses and fair to good control of certain annual broadleaves. Foxtail control is consistent. Fair on wild oats, weak on smartweed, kochia, and Russian thistle. Established perennials are not controlled.

Crop tolerance is fair to good. Some temporary stunting and searing of the first leaves is frequently noted. Does not cause stand reduction. Do not use if atrazine was used in the field the previous year.

Rates vary according to soil type. Rate of 3.5 pt/A Eptam or Genep has been satisfactory in most SDSU tests. The 2.25 pt/A rate is for annual grass control on lighter, low organic matter soils. No soil pH limitations.

Minimum carrier is 10 gpa for ground equipment. May be applied with liquid fertilizer carrier.

PREPLANT INCORPORATED: Apply before planting to a smooth, dry seedbed and incorporate immediately and thoroughly with a tandem disk set to cut 4 to 6 inches deep or a field cultivator equipped with sweeps. A second incorporation insures thorough mixing, especially under wet, lumpy, or trashy conditions. Follow with a harrow or mulcher to smooth and firm seedbed.

**Poast (SETHOXYDIM)**

1-2.5 pt Poast 1.5L (.2-.5 lb act)

Alfalfa. For new seedings or established pure stands. Grass will be killed. Controls emerged annual grass and suppresses perennial grass. No effect on broadleaved weeds. Has no residual activity.

Poast gives very good to excellent control of annual grass including green and yellow foxtail, seedling volunteer small grain, and wild oats. Provides partial to fair control of quackgrass. Other perennial grasses will be damaged. Weeds should be actively growing. Drought or other stress reduces effectiveness.

Excellent crop tolerance. Soil variations do not affect selectivity. Rates are 1 pt/A for foxtails (3-8 in.); 1.5/A pt for volunteer cereals (2-6 in.) and wild oats (2-4 in.). For quackgrass, use 2.5 pt/A when the weed is 6 to 8 inches; repeat to control regrowth. Add 2 pt/A crop oil concentrate. Thorough coverage is important. Minimum carrier is 5 gpa for ground.

POSTEMERGENCE. Apply using rate specified for weed.
**Butoxone, Butyrac (2,4-DB)**

4.33-6.5 pt Butoxone-1.75 lb/gal or 2-6 pt Butyrac 200-2 lb/gal or 3-4 pt Butoxone Ester-2 lb/gal or 2-4 pt Butyrac Ester-2 lb/gal (.5-1.5 lb act)

Alfalfa, birdsfoot trefoil, red or white clover for amine (Butoxone, Butyrac 200) forms; alfalfa or birdsfoot trefoil for ester (Butoxone Ester or Butyrac Ester) forms. Do not use on sweetclover.

For early postemergence weed control in new, pure legume seedings. Not for use with companion crop. Most useful for seedlings such as Russian thistle, wild mustard, pennycress, cocklebur, lambsquarters, and pigweed. Higher rates give temporary topgrowth control of Canada thistle or perennial sowthistle. Not effective on grasses.

Best control if weed seedlings are less than 1 to 2 inches tall. Use higher rate for larger weeds 2 to 5 inches tall. Use the lower rates of ester forms except where larger weeds must be controlled. Use only low rates on red clover.

Fair crop tolerance. Some twisting and leaf malformation noted on legume seedlings.

Minimum carrier is 5 gpa for ground or air with Butyrac Ester; 20 gpa for ground and 10 gpa for air with Butoxone and Butoxone Ester; and 10 gpa for ground and 5 gpa for air with Butyrac 200. Do not graze treated areas for 60 days after application.

**POSTEMERGENCE:** Apply when weed seedlings are small and legume seedlings have reached the 1- to 2-trifoliate leaf stage. Do not treat when crop is under stress or if expected high temperature exceeds 90 F.

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**Chem Hoe (PROPHAM)**

3-4 qt Chem Hoe or 27-35 lb Chem Hoe 15G (3-4 lb act)

Alfalfa and clover. For new seedings of pure legumes. Not for use with companion crop. Primarily for controlling downy brome ("cheatgrass"). Short residual control. Sometimes variable. Weed control most effective if soil temperature is under 55 F. Rainfall or irrigation required within 5 days after application for preemergence and postemergence applications. Use on trial basis only.

Very good crop tolerance. No soil limitations. Minimum carrier for spray formulations is 20 gpa for ground and 5 gpa for air.

PREPLANT: Apply to soil surface within 2 days of planting. Incorporate into the top 2 inches of soil.

PREEMERGENCE: Apply within 2 days after planting. Rainfall required.

POSTEMERGENCE: Apply in very early spring when crop has at least three leaves.

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**Buctril (BROMOXYNIL)**

1-1.5 pt Buctril 2L (.25-.38 lb act)

Alfalfa only. For new seedings of pure stands. Controls emerged annual broadleaves. Gives temporary topgrowth suppression of perennial broadleaves such as Canada thistle. No effect on grasses. Has no residual activity. Contact action.

Bromoxynil gives very good control of wild buckwheat, kochia, sunflower, cocklebur, and several other seedling broadleaves. Weeds should be small and actively growing. Apply before most weeds exceed the 4-leaf stage and when the alfalfa is at the 2- to 4-trifoliate leaf stage.

Use the lower rate for small, susceptible weeds and the higher rate for larger weeds. Temporary leaf burn can be noted in some situations. Application during hot, humid weather increases risk of leaf burn. It has not affected stands or reduced crop growth in SDSU tests. Labeling includes tank-mix with 2,4-DB for improved suppression of perennials.

Minimum carrier is 20 gpa for ground or 5 gpa for air. Do not use surfactant additives. Do not use with MCPA. Allow 30-day interval between treatment and harvest.

POSTEMERGENCE. Spring application. Do not apply if expected temperatures will exceed 70 F for 3 days after application.
Gramoxone Super (PARAQUAT)

3-5 pt Gramoxone Super 1.5L (.6-1 lb act)

Alfalfa only. May be used preplant or preemergence to replace tillage prior to planting or as a between cutting or dormant season treatment. Non-selective, non-residual action. Controls emerged annual grasses and broadleaves.

Good coverage is important. Minimum carrier is 20 gpa for ground or 5 gpa for air. Add 2 to 4 pt non-ionic surfactant per 100 gallons.

PREPLANT or PREEMERGENCE. Prior to planting or after planting but before crop emergence. Useful to control emerged weeds and volunteer crop growth prior to no-till planting in standing grain stubble. Minimize soil disturbance during planting. Lower rates are adequate for most situations if the weeds are small and growing actively.

DORMANT SEASON. Well established stands. Apply in late fall after crop is dormant or in early spring before one inch of new growth. Stunting expected if treated late. Do not apply if fall regrowth exceeds 6 inches. Controls emerged broadleaf seedlings and downy brome and suppresses perennial grass such as bluegrass. Limited use. Timing is critical. Crop must be dormant and weeds actively growing. Some potential for late fall use in situations where early winter annual growth has been heavy. Rates are 2.5 to 4 pt/A plus surfactant. Use high rates for perennial grass suppression. Do not use within 60 days of harvest.

BETWEEN CUTTINGS. Established stands. Controls emerged annual weeds and suppresses perennial grass. Must be treated within 5 days of cutting. Some potential to control annual seedlings emerged at time of first cutting. Rate is 1.5 pt/A for ground application. Do not use within 30 days of harvest.

Roundup (GLYPHOSATE)

1 pt-4 qt Roundup 3L (.38-3 lb act)

Forage legumes. May be used prior to planting or after planting prior to legume emergence. Primarily for eliminating perennials before seeding or to replace tillage prior to planting in reduced or no-till systems. Useful to control emerged weeds and volunteer crop growth prior to no-till planting in standing grain stubble. Volunteer winter grain and annual bromes must be out of winter dormancy. Roundup may also be used for spot treatment in emerged legumes. Non-selective. No soil residual activity. Emerged grasses and broadleaves are controlled.

Minimum carrier is 3 gpa for air and 3 to 5 gpa for ground. Weeds should be actively growing.

PREPLANT or SPOT TREATMENT. Use .75 to 1 pt/A for seedling annual grasses and volunteer cereals. Rates are 1 to 2 qt/A for quackgrass, 2 to 3 qt for Canada thistle, and 4 qt/A for field bindweed. Carrier is 5 gpa; add 17 lb ammonium sulfate in each 100 gallons solution. Do not graze treated areas for 8 weeks or harvest forage from spot treatments for 14 days after treatment.

Prowl (PENDIMETHALIN)

1-2.5 pt Prowl 4L (.5-1.25 lb act)

Forage legumes. Labeling is limited to legumes planted as cover crop or set-aside or Conservation Reserve Program (CRP) acreages. Do not feed or graze legume cover crop. Not for grass/legume mixtures.

Provides very good control of several annual grasses. Higher rates are for heavy, clay soil. Crop tolerance has been adequate in SDSU tests. Not for use on crops intended for hay or forage for livestock.

Apply preplant incorporated or preemergence. Preplant incorporated application provides more consistent control. Immediate incorporation preferred, but may be delayed in some situations. Minimum carrier is 10 gpa for ground or 5 gpa for air.
**Treflan (TRIFLURALIN)**

**1-1.5 pt Treflan 4L (.5-.75 lb act)**

Forage legumes. Labeling includes cover crop in set aside or Conservation Reserve Program. Labeling does not specify direct alfalfa seedings intended for hay harvest the seeding year. Follow grazing or harvest restrictions specified in the program. Not for grass/legume mixtures.

Provides very good control of several annual grasses. Crop tolerance has been adequate to meet program requirements.

Incorporate before seeding. Immediate incorporation preferred; however it may be delayed up to 24 hours in some conditions. A second incorporation pass improves uniformity. Minimum carrier is 5 gpa for ground or air.