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Weed Control in the Conservation Reserve Program (CRP)



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Weed control is essential in CRP to minimize competition and aid in stand establishment and maintenance. An adequate stand of the recommended species must be established and maintained to remain in compliance with the program standards.

Field Preparation and Considerations Prior to Planting

Field preparation and good agronomic practices are important to minimize weed problems. Weeds should be controlled prior to planting and the crop seeded at the proper depth into a firm seedbed to help ensure uniform crop emergence. Fall seeding minimizes foxtail (pigeongrass) and other annual weed problems during establishment and provides the crop with a competitive advantage over spring emerging annual weeds the following year.

Field history will influence potential weed problems and herbicide residues. Seeding should be delayed if herbicide residues are probable, if weed populations are high, or if perennial weeds are present. Controlling the weeds for several months prior to seeding will reduce the weed populations.

Perennial weeds are very difficult to control, especially in a grass-legume mixture. The best perennial weed management strategy in CRP is to control the weeds with tillage or herbicides prior to planting. Deep cultivation throughout the growing season whenever new shoots reach 3 to 4 inches will help control perennial weeds by depleting the stored food reserves in the roots. Perennial weeds also can be controlled with systemic herbicides such as Roundup, Banvel or 2,4-D. The best time to apply herbicides for perennial weed control is during the bud to early bloom stage of growth, or, to actively growing plants in the fall prior to freezing of the topgrowth. Early

spring herbicide treatments are generally ineffective for long-term perennial weed control. Do not use herbicides that might persist in the soil and injure the seeded crop. Roundup is inactive in soil, Banvel persists about 45 days per pint of product used (excluding time when the soil is frozen), and 2,4-D can remain active in the soil for four to six weeks.

Herbicide Carryover

Certain herbicides such as atrazine, Glean, Ally, Tordon, Banvel, Treflan, Sonalan and Prowl potentially can carry over from a previous application and injure subsequent crops, especially following a dry season. Herbicide carryover is most likely with high application rates, high soil pH and cool, dry conditions. Herbicide labels often do not specify waiting periods required before seeding CRP crops. The herbicides most likely to carryover in North Dakota are discussed below.

Atrazine. Atrazine carryover is greatest on high pH soils (>7.2) following a dry season. Residues can persist for three years or more from high application rates on soils with a pH of 8.0 or greater. Legumes are especially susceptible to atrazine. Most grasses are moderately susceptible while bluestem and switchgrass are tolerant to atrazine.

Tordon. Tordon can persist for three years or more with high application rates used in noncropland areas. However, grasses can be seeded the year following Tordon application at rates used in cropland (1 to 1.5 fl. oz.), but legumes probably would be injured. More than one season is required to dissipate Tordon sufficiently to allow legume seeding.



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Banvel. Legumes are more susceptible than grasses to Banvel. Generally, 45 days are required per pint of Banvel before seeding the crop. Banvel carryover probably would not be a problem following use in a small grain crop, but could cause problems following high rates of application for perennial weed control in fallow.

Glean, Ally. Glean and Ally can persist in the soil for three years or longer. Carryover is greatest with high pH soils. Several grass species are tolerant to Glean and Ally residues, while legume species are very susceptible. Do not plant legumes in fields with suspected Glean and Ally residues.

Treflan, Prowl and Sonalan. These herbicides occasionally carry over and injure susceptible crops, especially following high application rates and dry conditions. Herbicide carryover injury to the crop from a treatment applied the previous season is not likely following a small grain use rate and normal rainfall, but could occur from higher rates used in row crops or with extremely dry conditions. Legumes will tolerate dinitroaniline residues but grasses are susceptible.

Weed Control

The type of weed control program needed in CRP will depend on the type and severity of weed infestations and the recommended seeding mixture. Mowing is a cost-effective method of weed control if conducted in a timely manner. CRP crops should be mowed before the weeds get tall to prevent excessive competition and avoid smothering the crop with the plant residue. The plants should be mowed 2 to 4 inches high to minimize stress on the CRP crop. Do not swath the weeds, since the desirable plants might be smothered beneath the swath. Several mowings may be required throughout the growing season to control the weeds and prevent weed seed production.

Weed control in CRP is easier on pure grass seedings than grass-legume seeding mixtures because very few herbicides are labeled for use on both grass and legume species, while several herbicides can be used safely on pure grass seedings. Some herbicides have specific labeling for CRP while others do not. However, herbicides without specific CRP labeling can be used as long as the herbicide is registered for use on the plant species included in the seeding mixture. Several herbicide options for weed control in CRP are described below.

PREPLANT HERBICIDES

Herbicide	Rates (product/A)	Remarks
GRASS-LEGUME SEEDINGS:		
Roundup	0.75 - 4 pt.	The lower rates are for annual weed control. The higher rates are required to control perennial weeds. Apply with surfactant at 2 qt./100 gal. of spray solution. Ammonium sulfate at 17 lb./100 gal. of spray solution improves consistency of control, especially with stressed conditions and poor water quality. Delay tillage until three days or more after application. May be applied any time prior to crop emergence.
Cyclone	1.5 - 2 pt.	Contact herbicide to control existing vegetation. Will not control perennial weeds. Apply with surfactant at 1 pt./A. Thorough spray coverage is essential for good control. Use a minimum spray volume of 10 gpa for ground application and 3 gpa for aerial applications. May be applied anytime prior to crop emergence. Cyclone is a Restricted Use Herbicide .
2,4-D	1 - 4 pt (4 lb./gal. material)	Systemic herbicide for control or suppression of annual or perennial broadleaf weeds present at treatment time. The lower rates will control many small annual broadleaf weeds. Use the higher rates for suppression of perennial weeds. May be applied with Roundup (available as a prepackage mixture, Landmaster II or Landmaster BW) for broad-spectrum weed control. Allow three to four weeks after 2,4-D application before seeding the crop.
PURE GRASS SEEDINGS:		
Glean	1/3 oz.	Provides control of emerged weeds and residual control of many broadleaf weeds. Registered for use on blue grama, big and little bluestem, buffalo-grass, galleta, green needlegrass, green sprangletop, Indiangrass, Indian rice-grass, lovegrass, prairie sandreed, sand dropseed, sideoats, grama, switch-grass, wheatgrasses and wildrye grasses. Glean should be applied 90 days or more prior to planting plains or WW spar bluestems. Do not apply if legumes are to be seeded as they will be severely injured or killed.

POSTEMERGENCE

Herbicide	Rates (product/A)	Remarks
PURE GRASS SEEDINGS:		
MCPA, 2,4-D	0.5 - 4 pt. (of 4 lb./gal. material)	Provides annual and perennial broadleaf weed suppression or control. Use a maximum of 1 pt./A 2,4-D or 1.5 pt./A MCPA on grass seedlings after grasses have reached the 5-leaf stage of growth. Earlier applications or higher rates increase injury potential. Esters are more active than amines, but also have greater potential for grass injury and drift problems. Rates up to 4 pt./A may be used for perennial weed control in the year after seeding when the grass stand is fully established.
Banvel	0.25 - 4 pt.	Provides annual and perennial broadleaf weed suppression or control. Use a maximum of 1 pt./A after new grass seedlings have reached the 3-leaf stage of growth. The higher rates can be used for perennial weed control the year after seeding when the grass stand is fully established.
Bronate (Buctril + MCPA)	1.5 - 2 pt. (1.5 - 2 pt. + 0.5 - 1 pt.)	Controls most annual broadleaf weeds. Apply after grasses reach the 3-leaf stage to control small seedling weeds. Use a minimum of 10 gpa for ground applications and 5 gpa for aerial applications to insure thorough spray coverage, which is essential for good weed control. Bronate is labeled for use on crested wheatgrasses, tall wheatgrass, western wheatgrass, bluebunch wheatgrass, intermediate wheatgrass, sheep fescue, Russian wildrye and Canby bluegrass.
Ally	1/10 oz.	Annual and perennial broadleaf weed control or suppression. Apply to new grass seedlings after the 3- to 4-leaf stage or to established stands anytime after 1 leaf has developed. Add a nonionic surfactant at 1 to 2 qt./100 gallons of spray solution. Ally often is applied with 2,4-D to increase the spectrum of weed control. Ally is registered on blue grama, bluestems, buffalograss, green sprangletop, kleingrass, lovegrasses, orchardgrass, sideoats grama, switchgrass, wheatgrasses and wildrye grass.
Glean	1/6 - 1/2 oz.	Annual and perennial broadleaf weed control or suppression. Use a maximum of 0.5 oz./acre after seedling grasses are in the 3- to 4-leaf stage during the establishment year. Use a maximum of 0.33 oz./acre after the grasses have developed one or more leaves on established stands planted the previous season. Use a maximum rate of 0.5 oz./acre to fully tillered stands of grass. Apply with a nonionic surfactant at 1 to 2 qt./100 gallons of spray solution. Registered species include blue grama, big and little bluestem, buffalograss, galleta, green needlegrass, green sprangletop, Indiangrass, Indian ricegrass, lovegrasses, prairie sandreed, sand dropseed, sideoats grama, switchgrass, wheatgrasses and wildrye grasses.
Curtail	2 - 5 qt.	Annual and perennial broadleaf weed control, including Canada and biennial thistles, and knapweeds. Do not use in newly seeded areas until grass is established. Grasses should be tillered and have a good secondary root system developed before treating. Apply before thistles and knapweed have reached the bud stage of growth for the best control. The lower use rates will control most annual broadleaf weeds and biennial thistle. The higher rates will provide the best control of bolted musk thistle, Canada thistle and knapweeds.
Tordon	0.25 - 8 pt.	Annual and perennial broadleaf weed control, including thistles, bindweed and leafy spurge. Do not use in newly seeded areas until grass is established. Grasses should be tillered and have a good secondary root system developed before treating. Use 0.25 to 0.5 pt./acre for small annual weed control. Use 1 qt. per acre for control or suppression of actively growing perennial weeds. Tordon at 1 to 2 pt./acre is often tank-mixed with 2,4-D at 1 qt./acre to provide the most cost-effective leafy spurge control. Tordon at 2 to 4 qt./acre can be applied as a spot treatment to control deep rooted perennial weeds such as field bindweed and leafy spurge. Rates over 1 qt./acre may suppress certain perennial grasses. Tordon is a Restricted Use Herbicide .

POSTEMERGENCE

Herbicide	Rates (product/A)	Remarks
GRASS-ALFALFA SEEDINGS:		
Buctril	1.5 - 2 pt.	Annual broadleaf weed control including kochia, Russian thistle, sunflower, cocklebur and wild buckwheat. Apply after grasses are in the 2- to 3-leaf growth stage and alfalfa the three trifoliolate leaf stage for control of small seedling weeds. Use a minimum of 10 gpa for ground applications and 5 gpa for aerial applications to ensure thorough spray coverage, which is essential for good weed control. Buctril is approved for use on crested wheatgrasses, tall wheatgrass, western wheatgrass, bluebunch wheatgrass, intermediate wheatgrass, perennial ryegrass, fescue, bentgrasses, Kentucky bluegrass, Canby bluegrass, bahiagrass, Russian wildrye and seedling alfalfa.
Glean	1/6 - 1/3 oz.	Do not apply until grass-alfalfa mixtures have been established at least 1 year. Apply with a nonionic surfactant at 1 to 2 qt./100 gallon of spray solution. Temporary yellowing and stunting of the alfalfa may occur. Labeled grasses are the same as previously listed for Glean.

ALWAYS READ AND FOLLOW LABEL DIRECTIONS CAREFULLY BEFORE USING ANY PESTICIDE.