



## Conservation Reserve Program

### ESTABLISHING, MAINTAINING, AND MANAGING COOL-SEASON GRASSES

Natural Resources Conservation Service (NRCS)

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#### INTRODUCTION

Cool-season grasses are plants that grow best in the spring and fall when soil and air temperatures are cooler. They generally go dormant in mid-summer. Cool-season grasses, either alone or in combination with legumes and/or wildflowers, can be planted to reduce soil erosion and sedimentation, improve water quality, and provide wildlife habitat. Red fescue, hard fescue, sheep fescue, ryegrass, orchardgrass, bluegrass and timothy are examples of commonly planted cool-season grasses.

This job sheet provides instructions for planting and maintaining cool-season grasses so they can serve their intended purpose. Using proper planting and management techniques, especially during the establishment years, will significantly improve plant health, reduce weed problems, and increase the likelihood of success.

#### SITE PREPARATION

Before planting, it is essential to reduce competition from other vegetation that may be present on the planting site, such as other grasses or weeds. The type and density of the existing vegetation will determine how much pre-planting control is needed.

It's important to allow adequate time to complete this process. If significant quantities of noxious or aggressive weeds or invasive plants are present, be aware that you may need a year or two to control them before you can plant, especially if you will be planting in a large area.

##### Sites without Existing Vegetation

If the cool-season grasses will be planted into a clean, relatively weed-free area (such as cropland that was planted during the previous growing season), then competition from existing vegetation should not be a concern. However, a cover crop or nurse crop may be needed for erosion control and/or to reduce future weed competition (see page 2).

Take into account any noxious or aggressive weeds on the site that have been suppressed (but not killed) with previous herbicide applications. If live rootstocks are present, these weeds may be very difficult to kill in a new planting without destroying the desirable plants. If you think you have a significant weed problem, it may be prudent to plant a temporary cover crop such as clover or spring oats and use an appropriate herbicide to treat weeds for one full growing season. Then plant



the cool-season grasses the following year. If you don't know the site's weed history, consider contacting the local Maryland Department of Agriculture weed control specialist. The local specialist may have a record of weed control assistance previously provided on the property.

##### Sites with Existing Vegetation

If cool-season grasses are going to be planted into existing vegetation (for example, into other grasses or weeds), you will need to reduce competition before planting. For sites that need extensive preparation, much of the work can be done during the fall prior to spring planting, or in late spring before a fall planting.

Mow or brush hog the field or planting site. Then either treat the area with an appropriate herbicide or cultivate the planting area to reduce competition.

**Using herbicides.** Choose a non-selective herbicide such as glyphosate (for example, Roundup, KleenUp). A selective herbicide such as 2,4-D may be used instead, depending on the species of weeds you are trying to control. Follow all label directions when using herbicides, and consider herbicide persistence (carryover) as it may affect new plantings.

For extremely vigorous turf or weeds, you should plan to make one application of herbicide in early fall, followed by another the next spring before planting. Or, if you make the first herbicide application in the spring, you should plan to make a second application a few weeks before planting, depending on label directions.

Do not plant the cool-season grasses until the competing vegetation is sufficiently controlled. It is much easier to control the competition before planting than afterward. Cultivation of the planting area may be needed following herbicide treatment if the dead plant matter is very thick and will be difficult to plant through. You may also need to re-spray after cultivation if weed seeds brought to the surface germinate.

**Using cultivation only.** If you do not want to use herbicides, then you will need to cultivate the field or planting site. Cultivation is usually less effective than herbicides for killing heavy sod or persistent weeds. Also, bare ground produced by cultivation may be subject to erosion and can provide a good seedbed for more weed growth. If necessary, use a cover crop or nurse crop to control erosion and help suppress weeds.

### **Herbicide Carryover**

Carryover from herbicide treatments (recently applied or from prior years) can pose a threat to new plantings. Seedlings are particularly sensitive to herbicide carryover. Herbicides such as Basagran, Blazer, Poast, Plateau and Roundup have low persistence and generally do not pose a risk for carryover. Herbicides such as Atrazine, Preview, Canopy, Classic, Lorox Plus, Command, Scepter and Treflan have medium to high persistence and can pose a risk of carryover. The persistence of herbicides is directly affected by factors such as soil pH and moisture. To assess risks before planting, read the herbicide label or contact the manufacturer for specific information on persistence.

## **PLANTING**

### **Planting Dates**

Recommended planting dates typically range from late winter to late spring, and late summer to mid-fall. Most cool-season grasses benefit from planting in early fall, which allows two growing periods (fall and the next spring) for establishment of roots before summer. Summer heat and the lack of moisture is very stressful for cool-season grasses. Their survival is dependent on a well-developed root system.

Before deciding on the best planting date for a site, consider the need for weed control vs. the likelihood of having sufficient moisture for germination and growth of grass seedlings. Where cool-season weeds are likely to be a problem, planting in mid to late spring will allow more time for weed control before planting. On droughty sites, plantings made during late winter to early spring, or mid to late fall, are more likely to have the soil moisture necessary for seedling establishment.

To obtain recommended planting dates for your area, contact your local NRCS Field Service Center.

### **Seed Availability**

Seeds of many species may be available throughout the year, but supplies are usually best from late winter to early spring, and early in the fall. Don't wait to buy seed until the day you are ready to plant. Local seed suppliers may not always have the species or varieties you want, but may be able to order them for you. Or, you may need to order your seeds by mail or on the Internet. Contact your local NRCS Field Service Center if you need the names of suppliers. Store all seeds in a cool dry place before planting.

### **Using a Cover Crop or Nurse Crop**

If erosion is a concern, use a cover crop or nurse crop of 20 to 40 pounds/acre of oats, barley, or wheat. Oats are the preferred nurse crop because they are less competitive than the other small grains. To use as a cover crop, plant the small grain at the higher rate in the fall prior to a spring planting of cool-season grasses, or in the spring before a fall planting of cool-season grasses. Plant the small grain at the lower rate when used as a nurse crop along with the cool-season grasses.

If erosion is not a concern, a cover crop or nurse crop can be planted at the lower seeding rate to help suppress weeds.

### **Planting Methods**

Generally, the best method for establishing cool-season grasses is to use a no-till planter to drill seed into existing cover (for example, into a cover crop, crop residue, chemically killed weeds or grasses, etc.). No-tilling into undisturbed soil greatly reduces the germination of annual weeds and minimizes erosion, especially where slopes are 6 percent or more.

**No-till planting into plant residue.** On sites where existing vegetation was killed with herbicide or there is crop residue from previous years, no-till the cool-season grasses directly through the dead residue. Add a nurse crop as needed to control erosion and/or suppress weeds. If you must work up the soil because the residue is too thick to plant through, it is strongly recommended that you use a cover crop or nurse crop.

**No-till spring planting into a fall cover crop.** In the fall, prepare a seedbed by working the soil with a plow, disk, or similar equipment. Continue tillage until a reasonably uniform seedbed is prepared. Then plant a cover crop. In the spring, no-till the cool-season grass seed into the cover crop. (If the cover crop is tall, mow it first and no-till into the stubble.) If aggressive or noxious weeds have developed since the previous fall, use an appropriate herbicide to treat them before planting.

**Broadcast planting.** If necessary, cool-season grasses can be planted by broadcasting onto a conventionally

prepared seedbed. Broadcast seed onto a well-prepared, firm seedbed. Grasses with small seeds may need to be mixed with a filler (for example, sawdust, finely ground corn, or slightly moistened peat moss) to achieve an even distribution of seed. Incorporate the seed into the soil 1/8 to 1/4-inch deep by cultipacking, raking, or dragging. Broadcasting is usually less successful than no-tilling because it is more difficult to get good seed placement in the soil.

### **Lime and Fertilizer**

Most cool-season grasses prefer a pH of 5.5 and above. If legumes are included in the planting, a pH of at least 6.0 is desirable. A pH of 6.0 to 6.5 is ideal for most plantings.

Apply lime and fertilizer if needed based on soil test results. The use of commercial fertilizer and other forms of plant nutrients must be in compliance with Maryland nutrient management regulations, as applicable. Fertilizer applied without a soil test may result in an inefficient quantity of nutrients for plant establishment, or could result in overapplication of nutrients leading to potential water quality problems and excessive weed growth. For additional information, consult with your local Maryland Cooperative Extension specialist or certified nutrient management consultant.

### **PROTECTING PLANTS**

Use fences and other exclusion devices as needed to keep livestock out of the planting. Many types of fences and exclusion devices are available. Contact your local NRCS Field Service Center for recommendations for your site.

### **ESTABLISHING THE PLANTING**

Cool-season grasses usually take one to two years to become fully established. During that time, weeds can be a major problem.

The goal of weed control is to reduce (but not eliminate) competition from broadleaf and grass weeds such as mare's tail, ragweed, dandelion, foxtail, crabgrass, etc. Many of these plants provide good food and wildlife cover, but if they get too tall and dense, they will shade out the cool-season grass seedlings. Don't wait until weeds are four feet tall before trying to

control them. Mowing them at that stage will produce so much plant litter that you may smother the seedlings.

For specific maintenance requirements, please refer to the maintenance schedule attached at the end of this jobsheet.

### **MAINTAINING ESTABLISHED PLANTINGS**

CRP participants must maintain enrolled practices for the life of the contract. "Maintenance" refers to activities that are carried out as needed to keep plantings in good condition so they will continue to function as planned.

Mowing is the most frequently used maintenance practice to control woody growth, maintain the vigor of the planting, and control weeds. For specific maintenance requirements concerning mowing and weed control, please refer to the "Maintenance and Management Schedule" attached at the end of this jobsheet.

Managed haying and grazing may also be used, with approval from FSA, as a maintenance technique. If your CRP planting has been approved for managed haying or grazing, please refer to the "Maintenance and Management Schedule" at the end of this jobsheet for detailed requirements.

### **MANAGING ESTABLISHED PLANTINGS**

Beginning in the summer of 2003, CRP participants that are enrolled in new general enrollment contracts (as of Signup 26) or new continuous signup contracts (including CREP), may be required to perform specific management activities to ensure long-term plant diversity and wildlife habitat benefits. Participants can receive up to 50% cost-share after completing the management activities. For participants with older contracts, management practices are optional. Participants can request approval from FSA to add management practices to their contracts.

For cool-season grass plantings that contain a legume component, the CRP management activity consists of overseeding legumes starting in year 4 of the contract, then every 3 years until contract expiration. Please refer to the "Maintenance and Management Schedule" at the end of this jobsheet for detailed requirements concerning overseeding.

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## MAINTENANCE AND MANAGEMENT SCHEDULE FOR COOL-SEASON GRASSES

<b>Name:</b>	<b>Farm No.:</b>	<b>Tax Map:</b>
	<b>Tract No.:</b>	<b>Parcel:</b>
<b>Address:</b>	<b>Date:</b>	<b>Assisted by:</b>
	<b>Field(s):</b>	<b>Acres:</b>

### **Establishing the Planting**

#### ***Planting Year***

1. Mow the planting as needed to control weeds. Nesting season restrictions on mowing do not apply during the establishment period. Don't let weeds get taller than 18 inches. Mow to a height of 4 to 6 inches or just above seedling height. Using proper planting and management techniques, especially during the establishment period, will significantly improve plant vigor, reduce weed competition, and increase the likelihood of success.
2. Selective herbicides can be sprayed over the planting to control specific weeds. Herbicides are most effective when weeds are young and actively growing. Be sure to read and follow all label directions when using herbicides.
3. Control noxious weeds (specifically, Johnsongrass, Shattercane, Canada Thistle, Bull Thistle, Plumeless Thistle, and Musk Thistle) as required by state law. If you need assistance identifying these weeds, contact your local NRCS Field Service Center; Maryland Cooperative Extension; or Maryland Department of Agriculture, Weed Control Section.

#### ***Second Year After Planting***

1. Inspect the planting in early spring. If weeds persist and comprise more than 25 percent of the stand, either treat with an appropriate herbicide or plan on periodically mowing the area to a height of 6 to 8 inches. Throughout the growing season, continue to mow as needed to keep weeds under control.
2. Continue to control noxious weeds as required by State Law.

### **Maintaining an Established Planting**

1. For optimum wildlife benefits, mow on a 2 to 3 year rotation to control woody growth. Mow only 1/3 to 1/2 of the planting each year. The remaining unmowed areas will provide year-round wildlife food and cover. The best time to mow is late winter to early spring, preferably in March. This will allow grasses to provide protective cover for wildlife during the winter. On sites where soils are usually too wet in the spring, you can mow in the fall when soils are dry. Do not mow during the primary nesting season (April 15 - August 15).
2. For practices where water quality has been identified as the primary purpose, annual mowing may be needed to maintain grass in a dense turf-type condition that will prevent erosion and protect water quality. Do not mow during the primary nesting season (April 15 - August 15).
3. Periodic mowing for cosmetic purposes is prohibited at all times, and annual mowing for generic weed control is also prohibited.
4. Control noxious weeds and other invasive plants by spot treatment, using mechanical methods or approved herbicides. If it becomes necessary to control noxious weeds during the nesting season, contact your local weed control specialist concerning recommendations for spot-treating the weed problem. Spot treatment is limited to the immediate area of infestation. In an established planting, you must request and receive approval from the FSA County Committee before spraying or mowing during the nesting season. For more information about controlling specific weeds, contact your local office of Maryland Cooperative Extension or the Maryland Department of Agriculture, Weed Control Section.

## MAINTENANCE AND MANAGEMENT SCHEDULE FOR COOL-SEASON GRASSES

**Managed Haying and Grazing**     *Has been requested and approved for*    *acres*     *Will not be used*

Managed haying and grazing may be implemented for 1 out of every 3 years after the planting is fully established. The following practices are eligible for these activities: CP1, CP2, CP4B, CP4D, CP10, CP18B and CP18C. You must request approval from FSA before haying or grazing any CRP acreage. Your annual rental payment will be reduced based on the number of acres hayed or grazed.

Managed haying and grazing:

1. Is not allowed during the primary nesting season (April 15 - August 15);
2. Is not allowed within 100 feet of a stream or other permanent waterbody;
3. Is allowed only during the Haying and Grazing Period (August 16 - November 13) established by FSA.

Haying. Cool-season grasses are best hayed or grazed during the spring and fall when they are actively growing. Take the first cutting of orchardgrass, fescue, and other non-jointed grasses when plants are in the boot stage, with successive cuts made after an 8 to 10-inch recovery. For timothy and other jointed grasses, take the first cutting when plants are in early to full head, then successive cuts at 6 week intervals. Remember that you aren't allowed to cut hay during the nesting season, so you may only be able to take one or two cuttings per year.

Grazing. Begin initial grazing when the plants are at least 8 inches tall. Graze down to 3 inches, and allow regrowth to 8 inches before grazing again. The final grazing height should be about 4 inches to allow sufficient recovery before dormancy.

### Overseeding Forbs and Legumes

*Is a required management activity*     *Has been voluntarily selected by the participant*     *Will not be used*

For cool-season grass plantings that contain a forb or legume component, this CRP management activity consists of overseeding forbs or legumes starting in year 4 of the contract, then every 3 years until the contract expires. Use the same forbs or legumes as originally specified in the planting mix. Do not overseed during the primary nesting season (April 15 - August 15).

Use one of the following planting methods for overseeding:

1. No-till planting. Cut the grass short before overseeding. Use a no-till drill to place seed ¼ to ½-inch into the soil, with minimal disturbance of existing plants. This is the preferred planting method for forbs and legumes because drilling places the seed directly in the soil.
2. Broadcast planting. Cut the grass short and broadcast the seed. Then press the seed into the soil with a smooth or ring-type roller, or pull a drag or harrow over the seeded area to enhance seed-soil contact. The success of broadcast seeding depends in part on the amount of ground litter (thatch) that is present. For legumes and other small seeds, the litter layer should be less than ¼-inch, preferably almost zero. If the litter is thicker, then it must be opened before seeding by using a light disk, harrow, or other implement to expose the soil surface. It is important that as many seeds as possible come in direct contact with the soil. If light disking or harrowing is needed, use a minimum set-back of at least 35 feet from a watercourse, waterbody, or wetland.
3. Frost seeding. For legumes only, you can use frost seeding during the dormant season. Broadcast legumes over the grass in late winter or very early spring when the ground is still frozen. Freezing and thawing, in combination with rainfall, will work the seed into the soil surface.

### Additional Recommendations: