

Establishing Introduced Grasses and Legumes

Conservation Reserve Program Job Sheet

CP1

INTRODUCTION

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

This job sheet provides instructions for planting and maintaining cool-season grasses and legumes 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, such as other grasses or broadleaved 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 more to control them before you can plant, especially if you will be planting in a large area.

Sites without Existing Vegetation

If the introduced cool-season grasses and legumes 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 root systems 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 herbicides to treat weeds for one full growing season. Then plant the introduced cool-season grasses and legumes the following year.

Sites with Existing Vegetation

If cool-season grasses are going to be planted into existing vegetation such as other grasses or broadleaved 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 the field or planting site and treat the area with herbicide to reduce competition.

Using herbicides. Choose a non-selective herbicide such as glyphosate. A selective herbicide such as 2,4-D may be used instead, if you only need to control broadleaved weeds. 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 introduced cool-season grasses and legumes until the competing vegetation is sufficiently controlled. It is much easier to control the competition before planting than afterward.

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 in prior years can pose a threat to new plantings. Seedlings are particularly sensitive to herbicide carryover. Herbicides such as glyphosate have very short persistence and generally do not pose a risk for carryover. Herbicides such as atrazine have medium to long 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. Summer heat and the lack of moisture is very stressful for introduced cool-season grasses and legumes. 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 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 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 Office.

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. They may be able to order them, but there could be a significant delay in delivery at certain times of the year. You may need to order your seeds by mail or on the Internet. Contact your local NRCS Field Office 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 oats, barley, or wheat. To use as a cover crop, plant the small grain (barley or wheat) in the fall prior to a spring planting of cool-season grasses, or in the spring (oats) before a fall planting of cool season grasses. To use as a nurse crop, plant the small grain with the introduced cool-season grasses and legumes. Oats are the preferred nurse crop because they are less competitive than the other small grains. When erosion is not a concern, a cover crop or nurse crop may still be planted to help suppress weeds.

Planting Methods

Generally, the best method for establishing introduced cool-season grasses and legumes is to use a no-till drill to seed into existing cover (for example, into a cover crop, crop residue, grasses and weeds killed by herbicides, etc.). No-tilling into undisturbed soil greatly reduces the germination of weeds and minimizes soil erosion, especially where slopes are six percent or more (6ft. of fall per 100 ft.).

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 introduced cool-season grasses and legumes directly through the dead residue. Add a nurse crop as needed to suppress weeds.

No-till planting into a cover crop. No-till the introduced cool-season grasses and legumes into the cover crop (spring planting in fall cover crop or fall planting in spring cover crop). If aggressive or noxious weeds have developed since the previous fall, use an appropriate herbicide to treat them before planting.

Broadcast planting. If necessary, introduced cool-season grasses and legumes can be planted by broadcasting onto a conventionally prepared seedbed. Broadcast seed onto a well prepared, firm seedbed. Small seeded grasses and legumes may need to be mixed with a filler to achieve an even distribution of seed. Lightly incorporate the seed into the soil 1/8 - 1/4-inch deep by cultipacking, raking, or dragging (do not disc). Broadcasting is usually less successful than no-tilling because it is more difficult to get good seed placement in the soil.

Lime and Fertilizer

Introduced cool-season grasses prefer a pH of 5.5 and above. Since legumes must be 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. Fertilizer applied without a soil test may result in an inefficient quantity of nutrients for plant establishment, or could result in over-application of nutrients leading to potential water quality problems and excessive weed growth. For additional information, consult with your local Pennsylvania Cooperative Extension specialist or 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 Office for recommendations for your site.

ESTABLISHING THE PLANTING

Introduced cool-season grasses and legumes 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 (not necessarily eliminate) competition from other grasses and broadleaved weeds such as foxtail, crabgrass, mare's tail, ragweed, 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 a few feet tall before trying to control them. Mowing the weeds at that stage will produce so much plant litter that you may smother the seedlings.

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.

MANAGING ESTABLISHED PLANTINGS

CRP Participants will 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.

Control noxious weeds by spot treatment, using mechanical methods or appropriate herbicides. If it becomes necessary to control noxious weeds during the nesting season, contact the FSA County Committee. 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 Pennsylvania Cooperative Extension.

Periodic mowing for cosmetic purposes is prohibited at all times, and annual mowing for generic weed control is also prohibited.

