



United States Department of Agriculture  
Natural Resources Conservation Service

# PASTURE AND HAY PLANTING

## Cool Season Perennial Grass Planting

### Virginia Conservation Practice Job Sheet

512 (a)



#### Definition of Practice

Establishing stands of cool season perennial grasses as part of a resource management conservation plan. The grasses may be used for forage, hay, pasture, or wildlife habitat.

#### Purpose

This practice should be used to establish cool season grass stands as part of a conservation plan for livestock. This practice may also be used to improve or maintain livestock nutrition and/or health, extend the grazing season, reduce soil erosion, improve water quality, balance forage supply and demand during periods of low forage production, improve soil quality, improve wildlife habitat, and increase carbon sequestration.

#### Conditions where Practice Applies

This practice applies on cropland, pastureland, hay land, and other lands where cool season perennial grasses are needed for pasture, forage, hay, or wildlife habitat.

#### Establishment Specifications

Depending on the species and location within the state, cool season perennial grasses may be established in either spring or fall in the Northern Piedmont and Mountain and Valley regions of Virginia. Spring seeding of cool season perennials in the Coastal Plain or Southern Piedmont is usually not recommended due to quick onset of hot weather before good establishment. See page 4 for specific establishment recommendations for your farm.

Stands of cool season grasses may be established either by conventional or no-till methods. Regardless of the seeding method used, care should be taken to avoid planting the seed too deep. If soil erosion is a concern during the establishment period, then it is highly recommended using a no-till method of planting. This will protect the soil in the field and reduce the potential off-site effects of soil erosion. Avoid planting or cultipacking planted seedbeds in wet soil since it may result in improper seed placement and planting failure.

When seeding by *conventional methods*, plowing and disking should be done deep enough to kill all existing vegetation and to incorporate lime and fertilizer into the top 4 – 6 inches of soil. Lime and fertilizer applications will be applied according to the recommendations of an approved soil testing facility. Eliminate any rills and gullies. The surface should be reasonably smooth and free of ridges, rocks, and other obstructions. Prepare a firm seedbed. A dry, firm seedbed is critical to avoid planting seed too deep and to ensure good seed-to-soil contact. The seeding may be done with a drill, cultipacker seeder, cyclone seeder, hydro-seeder, or other suitable equipment. The seed should be covered a depth of ¼ to ½ inches in a firm seedbed. A roller or cultipacker will ensure a good seed-to-soil contact. Cultipack or roll the seeded area only once to ensure good seed-to-soil contact and the proper seeding depth. Conventional seeding may be used for establishment on areas that have been recently cropped, where weedy competition will be reduced, and where the risk of soil erosion is minimal.

When seeding by *no-till methods*, care needs to be exercised with no-till drills to ensure correct seed flow and seeding depth. Calibrate the drill and when planting, check the seeding depth often to avoid planting too deep. Do not pull the drill too fast.

Seed must be placed in firm contact with the mineral soil at a depth of ¼ to ½ inches. Depth control bands or other controls should be used to ensure proper placement of seed. ***Packer wheels are essential.*** Eliminate competitive vegetation by heavy grazing, mowing, and/or herbicides. Undesirable species should be controlled by applying a suitable herbicide at least two weeks before the seeding date. Insecticides should be applied to control potential insect infestations.

Use of adapted and compatible species, varieties, or cultivars is important to the success of the planting. Seed will conform to minimum state standards for purity, germination, and other features. Seed tags and other information may be requested by an NRCS representative to verify seed quality. Never compromise seed quality.

### **Weed Control before Planting**

Weed control is critical to ensuring a good stand of cool season grass. In most situations, control should begin prior to the seeding and seedbed operations. Either conventional seedbed preparation or herbicide applications or both may be used to control weeds prior to establishment. When using pesticides, consult your local Virginia Cooperative Extension (VCE) agent for specific pesticide recommendations or the VCE Pest Management Guides located @ <http://www.ext.vt.edu/pubs/pmg/>. Always follow the label instructions when using pesticides.

### **Operation and Maintenance**

After planting, competition control remains an important part of establishing cool season perennial grasses. To control competition and prevent weed seed formation, the established stands may benefit from top clipping as needed from May through July especially during the establishment period. Post emergent herbicides may also be used during the establishment period as recommended by your local extension agent.

Livestock shall be excluded until the plants are well established.

Allow enough time for establishment prior to harvest or disturbance of the stand.

Growth of seedlings or sprigs shall be monitored for water stress. Water stress may require reducing weeds, early harvest of any companion crops, irrigating when possible, or replanting failed stands, depending on the severity of drought.

Invasion by undesirable plants shall be controlled by cutting, using a selective herbicide, or by grazing management by manipulating livestock type, stocking rates, density, and duration of grazing period.

Insects and diseases shall be controlled when an infestation threatens stand survival.

Evaluate forage stands each season or as needed to determine management inputs needed to achieve the desired purpose(s).

## Specifications

Site-specific requirements are listed on this specification sheet. This job sheet is provided as a component of a resource conservation plan. Plan maps, location of fields to be planted, complementary conservation practices and measures, grazing schedule, other relevant information and additional specifications may be included. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See Conservation Practice Standard *Pasture and Hay Planting* (512).

<b>Client:</b>	<b>Farm #:</b>	A no-till drill is available from the SWCD office: <input type="checkbox"/> YES <input type="checkbox"/> NO  Phone: (     ) _____
<b>Field(s):</b>	<b>Tract #:</b>	
<b>Prepared By:</b>	<b>Date:</b>	

<b>Purpose</b> (check all that apply)	
<input type="checkbox"/> Establish adapted and compatible species, varieties, or cultivars.	<input type="checkbox"/> Balance forage supply and demand during periods of low forage production.
<input type="checkbox"/> Improve or maintain livestock nutrition and/or health.	<input type="checkbox"/> Reduce soil erosion and improve water quality.
<input type="checkbox"/> Improve wildlife habitat	<input type="checkbox"/> Improve soil quality
<input type="checkbox"/> Extend the length of the grazing season.	<input type="checkbox"/> Increase carbon sequestration.

<b>Specifications</b>	<b>Field ____</b>	<b>Field ____</b>	<b>Field ____</b>
Seed and Rate			
Lime (tons/acre)			
Fertilizer (tons/acre)			
Planting Method			
Site Preparation Method			
Site Preparation Treatment Date			
Herbicide (if known & applicable)			
Herbicide Application Dates			
Planting Date(s)			
Total Area Planted (acres)			

### Site Preparation (select method)

#### A. Site Preparation for No-Till Method

- Graze heavy or mow as low as possible to remove as much of the existing vegetation as possible. **Additional requirements:**
  
- Apply an approved herbicide to kill existing vegetation at the rate recommended by the VCE in the fall on or by \_\_\_\_\_ (date). Where dense sods exists, apply a second application on remaining vegetation after spring green-up once vegetation has reached 4-6 inches on or by \_\_\_\_\_ (date). Follow all label precautions and directions. Wait a minimum of two weeks or as directed by the product label and plant. *All Herbicide applications should be performed when vegetation is actively growing.* **Additional requirements:**
  
- The site will be prepared by grazing followed by an application of herbicide as recommended by the VCE on or by \_\_\_\_\_ (date). Follow all label precautions and directions. Wait a minimum of two weeks or as directed by the product label and plant. *All Herbicide applications should be performed when vegetation is actively growing.* **Additional requirements:**

#### B. Site Preparation for Conventional Method

- The seedbed should be prepared by disking and/or plowing to a depth of 4-6 inches. After disking, make **at least one** trip over the field using a cultipacker to firm the seedbed. Ensure that the seedbed is dry and firm to obtain the proper planting depth. Wet soils should not be cultipacked or planted. **Additional requirements:**
  
- The site will be prepared by grazing followed by a disking and/or plowing to a depth of 4-6 inches. After disking, make **at least one** trip over the field using a cultipacker to firm the seedbed. Ensure that the seedbed is dry and firm to obtain the proper planting depth. Wet soils should not be cultipacked or planted. **Additional requirements:**

### Planting Method (select method)

- No-Till Drill - Establish vegetation according to the specified seeding rate of \_\_\_\_\_ lbs/acre. Seed must be placed in firm contact with the mineral soil at a depth of  $\frac{1}{4}$  to  $\frac{1}{2}$  inches. Depth control bands or other controls should be used to ensure proper placement of seed. *Packer wheels are essential.* Check depth of seed frequently during planting. **Additional requirements:**
  
- Conventional tillage - Seed may be broadcast if accomplished in a uniform manner. No more than  $\frac{1}{3}$  of the seed should be visible on the soil surface. Seeding depth should never exceed  $\frac{1}{4}$  inch. A roller or cultipacker should be used to ensure good seed-to-soil contact. **Additional requirements:**

**Operation and Maintenance**

Follow the procedures and methods for Operation and Maintenance as outlined in this job sheet.

Livestock shall be excluded until the plants are well established. Control undesirable plants by cutting, selective herbicide, or by grazing management by manipulating livestock type, stocking rates, density, and duration of stay. Insects and diseases shall be controlled when an infestation threatens stand survival. Evaluate forage stands each season or as needed to achieve the desired purpose(s).

Inspect and calibrate all equipment.

Growth of seedlings shall be monitored for water stress. Water stress may require reducing weeds, early harvest of any companion crops, irrigating when possible, or replanting failed stands, depending on the severity of the drought.

**Additional requirements:**

**Additional Notes, Specifications, Requirements, etc.**


**For more information concerning this practice contact:**

\_\_\_\_\_ at \_\_\_\_\_

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<b>Forage Grass Establishment</b>						
		Recommended Seeding Dates				
<b>Forage</b>	<b>Seeding Rate</b>	<b>Coastal Plain</b>	<b>Southern Piedmont</b>	<b>Mountain/Valley Northern Piedmont</b>	<b>Desired pH</b>	<b>Seeding Depth</b>
Tall Fescue, EI*	15	9/1-10/15	2/15-4/1 8/15-10/1	3/1-4/15 8/1-9/15	5.6-6.2	¼"-½"
Tall Fescue, EF*	20	9/1-10/15	2/15-4/1 8/15-10/1	3/1-4/15 8/1-9/15	5.8-6.2	¼"-½"
Tall Fescue, 'Novel' endophyte	20	9/1-10/15	2/15-4/1 8/15-10/1	3/1-4/15 8/1-9/15	5.8-6.2	¼"-½"
Kentucky Bluegrass	10-15	Not adapted	2/15-4/1 8/15-10/1	3/1-4/15 8/1-9/15	6-6.5	⅛"-¼"
Orchardgrass	15	9/1-10/15	2/15-4/1 8/15-10/1	3/1-4/15 8/1-9/15	5.8-6.2	¼"-½"
Rescuegrass aka Prairiegrass	25 drilled 30-40 broadcast	9/1-10/15	4/1-5/1 8/15-10/1	4/15-5/15 8/1-9/15	6.0-7.0	¼"-½"
Reed Canary Grass	15	9/1-10/15	3/1-4/15 8/15-10/1	4/1-5/1 8/1-9/15	5.8-6.2	¼"-½"
Perennial Ryegrass	25	Not adapted	Not adapted	4/1-5/1 8/1-9/15	5.8-6.2	¼"-½"
Timothy	10	Not adapted	Not adapted	4/1-5/1 8/1-9/15	5.8-6.2	¼"-½"

EI= endophyte infected; EF = endophyte free

Table 1