

Establishing Cool-Season Grasses

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Seedbed Preparation

It is important to take soil samples before planting to ensure fertility and pH are suitable for grass to be planted. In general, soil pH should be nearly neutral (pH of 6-7) for establishment of most grasses. Certain forage species are better adapted than others in less than ideal conditions (low, wet areas or highly alkaline areas). Adequate fertility is essential for vigorous seedling development and establishment. Follow state soil testing lab recommendations.

For rapid and uniform field emergence, seedbed preparation is critical. Grass seed can be planted into conventionally prepared seedbeds, into stubble or residue of previous crops using a no-till drill, or into an established pasture using herbicides to burn down existing species. Good seed-to-soil contact is essential for successful establishment using any of these methods. A seed not in contact with the soil may not be able to obtain adequate moisture for germination and establishment. Remember to check the herbicide history of the site to determine whether or not problems with carryover may exist.

Conventional Seeding

Conventional seeding requires one or more of the following tillage operations: plowing, disking, harrowing, and cultipacking. The type of tillage equipment used and number of passes required depends on soil type, degree of slope, and existing vegetation. A firm seedbed is critical to ensure adequate seed-to-soil contact. Inadequate seedbed preparation is one of the leading causes of stand failures.

Minimum and No-till Seeding

This type of site should already be fairly firm. Proper herbicides (no residual activity or carryover problems) and rates should be utilized to burn down any green plants or weeds before seeding. The use of nonresidual herbicides to control weeds will help ensure successful stand establishment by providing adequate cover and reducing topsoil moisture loss. Check with the local county extension office for recommended herbicide programs for establishing any of the crops listed (Table 1).

Seeding Depth

Shallow seeding of most forage species is critical in obtaining rapid, uniform stands. Seeds placed too deep may not emerge and those placed too shallow, in a loose seedbed, have very poor seed-to-soil contact and may not germinate. Recommended seeding depths range from 1/8-3/4 inches (Table 1), with deeper depths (3/4") on sandy soils. Test the planter to determine the depth of seed placement and make adjustments as necessary.

Time of Seeding

Cool-season grasses can be seeded during spring, late summer, or late fall. Cool, moist conditions in the early spring make this an excellent time for establishment. Late summer seedings will generally incur less competition from weeds than in the early spring, but moisture may be limiting in some years. There should be adequate moisture to a depth of 2 feet for successful late summer seeding. Late fall, or dormant seedings, should be made after the possibility of germination has passed. The objective of a dormant planting is to have seed in the ground and ready to germinate the next spring.

Warm-season grasses should be planted when soil temperatures are relatively warm. Soil temperatures good for corn establishment are usually adequate for warm-season grasses.

Seeding Rates

Seeding rate will vary depending on species, row spacing, firmness of the seedbed, seeding equipment, and weed competition. Seed should always be planted on a pure live seed basis. There are some recommended seeding rates for various grasses and legumes when they are seeded alone (Table 1). If planting a mixture, it is not necessary to plant the full seeding rate for each species.

Table 1. General guidelines for establishment of several varieties of grass and legume forage crops.

Species	Planting Depth (in.)	Seeding Rate (lbs PLS/ac)	Average Seeds/LB
<i>Alfalfa</i>	¼-½	10-15	227,000
<i>Birdsfoot Trefoil</i>	⅛	7-9	375,000
<i>Gramma, Blue</i>	⅛-¼	2-3	850,000
<i>Gramma, Sideoats</i>	¼-½	4-7	200,000
<i>Bluegrass, Kentucky</i>	⅛	5-10	2,177,000
<i>Bluestem, Big</i>	½-¾	5.5-8	160,000
<i>Bluestem, Little</i>	½-¾	3.5-5	260,000
<i>Bromegrass, Meadow</i>	¼-½	10-12	90,000
<i>Bromegrass, Smooth</i>	¼-½	6.5-8	135,000
<i>Buffalograss</i>	¼-¾	-	49,940 (burs)
<i>Cicer Milkvetch</i>	¼-½	10-12	130,000
<i>Clover, Alsike</i>	¼-½	5-7	700,000
<i>Clover, White</i>	¼-½	3-6	800,000
<i>Clover, Red</i>	¼-½	10-12	275,000
<i>Creeping Foxtail, Garrison</i>	⅛-¼	5-8	450,000
<i>Fescue, Creeping Red</i>	⅛-¼	3-5	615,000
<i>Fescue, Tall</i>	¼-½	10-16	227,000
<i>Green Needlegrass</i>	¼-½	5-7	170,000
<i>Indiangrass</i>	¼-½	5-8	175,000
<i>Meadow Foxtail</i>	⅛-¼	5-8	575,000
<i>Orchardgrass</i>	¼-½	5-8	654,000
<i>Reed Canarygrass</i>	¼-½	6-8	550,000
<i>Ryegrass, Perennial</i>	¼-½	14-18	240,000
<i>Sand Dropseed</i>	⅛	1-2	5,600,000
<i>Sand Lovegrass</i>	⅛	2-4	1,600,000
<i>Sweetclover</i>	¼-½	9-12	260,000
<i>Switchgrass</i>	¼-½	4-7	390,000
<i>Timothy</i>	¼-½	6-9	1,200,000
<i>Wheatgrass, Crested</i>	¼-½	5-7.5	190,000
<i>Wheatgrass, Intermediate</i>	¼-½	10-12	90,000
<i>Wheatgrass, Slender</i>	¼-½	8-12	135,000
<i>Wheatgrass, Tall</i>	¼-½	11-14	80,000
<i>Wheatgrass, Western</i>	¼-½	8-10	110,000
<i>Wildrye, Canada</i>	¼-½	8-10	87,000
<i>Wildrye, Russian</i>	¼-½	5-7.5	175,000