

HAY AND PASTURE MANAGEMENT

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
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ESTABLISHING WARM-SEASON GRASSES

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Introduction

Care and attention to detail must be taken when establishing warm-season grasses. Farmers and ranchers familiar with planting techniques for cool-season grasses may need to change some of their methods to ensure that their warm-season grasses develop into thrifty, profitable forage crops.

When establishing warm-season grasses, consider:

- Soil testing
- Seed quality
- Seeding rates
- Seedbed preparation
- Planting techniques
- Evaluation of newly-seeded fields
- Weed control and fertilization

Let's look at some of the steps necessary to ensure success with warm-season grasses.

Soil Testing

Soil tests are available from the University of Missouri Extension Service. Each field should have its soil tested independently. Generalizations cannot be made because of soil variances within relatively small areas. The tests will show the pH of the soil and any deficiencies.

Soil pH should be above 5.5 to establish warm-season grasses. Lime, which increases the alkalinity of soil, should be added to the soil at least five months before planting if the soil test shows that it is needed. Deficiencies of phosphate or potash can be corrected during seedbed preparation. It is recommended that nitrogen not be applied during early establishment of warm-season grasses because it promotes competition from undesirable plants.

Seed Quality

Quality of warm-season grass is extremely important and quite variable. Warm-season grass seed is sold on a "pure live seed" (PLS) basis. Pure live seed refers to the percentage of seed that is capable of germinating. This information usually is included on a tag

attached to the seed bag. For example, a 50-pound bag of bulk grass seed might contain 40-pounds of pure live seed and 10 pounds of dead seed or trash. The PLS percentage of this seed would be 80 percent. If you purchase untested warm-season grass seed, there is no way of knowing how much pure live seed you are purchasing. In addition, weed seeds could be included in your purchase.

Seeding Rates

Seeding rates for warm-season grasses are dependent on the method of planting as well as the intended use of the grass. Seeding rates also depend on the type of seed planted. Increasing the seeding rate may compensate for poor seed placement by inadequate seeding equipment or for poor seedbed preparation.

Warm-season grasses, depending on the species, are seeded from mid-April to mid-June in northern Missouri. In southern Missouri, planting can begin as early as April 1. When there is a choice, the earlier dates are recommended.

Seedbed Preparation

Minimum seedbed preparation usually includes plowing, disking, harrowing and cultipacking to firm up a seedbed. To check for adequate firmness, walk across the prepared seedbed. Your foot prints should only be as deep as the soil of your shoe. If the field contains cool-season grass, you may need to chemically kill the sod before preparing the seedbed since some cool-season grasses may survive tillage. If the sod has been chemically treated, you have the option of preparing a clean-tilled seedbed or no-tilling into the residues. For clean-tilled seedbeds, seed can be broadcast, but drilling is the preferred method of seeding. Take extra care in treating existing sod with herbicides if no-till is the chosen method of seeding, and use a drill that will place the seed at the proper depth and with good soil contact.

Planting Techniques

When planting warm-season grass seed, two things are important - a firm seedbed and proper seed depth. Plant shallow. The ideal planting depth is one-quarter to one-half inch. Many conventional grain drills place the seed too deep. Planting deeper than one-half inch usually results in failure. De-bearded seed is recommended. It costs more, but specialized planters are needed if bearded seed is used.

Evaluation of Newly-Seeded Areas

An important step often overlooked is proper evaluation of a new seeding. Warm-season grasses require a soil temperature of 55 degrees or above for germination. With sufficient moisture and soil temperatures, new seedlings should emerge in 10-20 days. Problems arise because other grasses and weeds also emerge. People unfamiliar with grass seedlings often assume a planting has failed because of improper identification. This is especially true when seeds are broadcast because rows are not apparent. Digging up a few new seedlings and looking at the attached seed can help. In addition, consulting a native grass specialist with the Missouri Department of Conservation, NRCS or the University of Missouri Extension Service may prove worthwhile.

When proper steps are taken, warm-season grasses establish themselves quite rapidly. They generally establish themselves more slowly than cool-season grasses. But, while the above-ground growth of newly-planted, warm-season grasses may seem slow, native warm-season grasses are developing extensive root systems.

If seedling density does not appear to be high with your warm-season grasses, don't panic. An adequate, mature stand of native warm-season grass might have only one plant per square foot. A stand with only one plant per square yard may be salvaged with good management. Individual plants can become quite large, and may fill in poor stands by self seeding or vegetative spreading.

Weed Control and Fertilization

Since native warm-season grass seedlings grow slowly at first, competition from other grasses and broad-leaf weeds can be severe. Weed control is a must. Weeds can be controlled by mowing or spraying. Mowing weeds is effective when they reach a height of 18 inches. Don't mow lower than four to six inches or native grass seedlings could be damaged. It may take up to three mowings the first year, but remember to always mow above new seedlings. In addition, don't mow after August 1, when plants are storing carbohydrates for the winter. For chemical control it is best to check with NRCS, the Missouri Department of Conservation or the University of Missouri Extension Service, and pay close attention to label instructions. In addition, do not graze a new planting the first winter because grazing can pull new seedlings loose.

New plantings that exhibit a dense stand of grass with few weeds can be fertilized in May or early June of the second year, or when grasses are about eight inches tall. In general, 50 pounds of actual nitrogen per acre is recommended.

Summary

Warm-season seedlings offer few opportunities the first year for hay and grass producers. Don't be over anxious. Plantings may not develop their full potential until the third growing season. Graze lightly, even during the second growing season. Correct timing of haying and grazing along with proper cutting and grazing heights will ensure maximum production of native warm-season grasses.

Where to Get Help

For more information about warm-season grasses, contact your local office of the Natural Resources Conservation Service. It is listed in the telephone directory under "U.S. Government".

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