

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**PASTURE AND HAY PLANTING**

(Ac.)

CODE 512

**DEFINITION**

Establishing native or introduced forage species.

that may be toxic to either plants or animals.

- Resistance to disease and insects common to the site or location.

**PURPOSE**

- Establish adapted and compatible species, varieties, or cultivars for forage production.
- Improve or maintain livestock nutrition and/or health.
- Balance forage supply and demand during periods of low forage production.
- Reduce soil erosion and improve water quality.
- Increase carbon sequestration

Specified seeding/plant material rates, methods of planting and date of planting shall be consistent with Missouri NRCS Agronomy Specification for Vegetation Establishment, Herbaceous Seeding 723 and documented guidance cited by plant materials program, research institutions or agency demonstration trials for achieving satisfactory establishment.

Seeding rates will be calculated on a pure live seed (PLS) basis using JS-AGRON-25 or the current Missouri SeedRate Program.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice may be applied on lands where forage production and/or conservation is desired and feasible.

The criteria is contained in the Missouri NRCS Agronomy Specification for Vegetation Establishment, Herbaceous Seeding (723).

Livestock shall be excluded until the plants are well established except that livestock, using a prescribed stock density and carefully controlled access, may be used to suppress undesired competition. Overgrazing of young plants is a danger; length of grazing periods must be limited to reduce selectivity.

**CRITERIA**

**General Criteria Applicable to All Purposes**

Plant species and cultivars shall be selected based upon:

- Climatic conditions, such as annual rainfall, seasonal rainfall patterns, growing season length, humidity levels, temperature extremes and USDA Plant Hardiness Zones.
- Soil condition and *landscape* position attributes such as *Pasture Suitability Group (PSG)*, pH, available water holding capacity, aspect, slope, drainage class, fertility level, salinity, depth, flooding and ponding, and levels of elements present

To maintain legumes in a grazed pasture, plantings including legumes must be managed to provide adequate rest—40 to 45 days during summer. The grazing period must not exceed seven days during times of rapid growth and 14 days during periods of slow growth. A rotation system that provides the minimum period of rest and keeps grazing periods below the maximum is required.

Bermudagrass may not be planted north of I-70. Many seeded varieties lack sufficient cold tolerance, even for South Missouri; cold-tolerant sprigged varieties are usually the

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resource Conservation Service or download the standard from the electronic Field Office Technical Guide for Missouri.

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## 512-2 PASTURE AND HAY PLANTING

preferred choice. Cold tolerance shall be a primary factor in variety selection. Bermudagrass will not yield well unless high rates of nitrogen fertilizer are applied; it should only be planted where there is access to large quantities of organic nitrogen (livestock manure for example) or where a thorough economic analysis supports long-term application of high rates of commercial nitrogen.

Old World bluestems are not recommended for planting north of I-70.

Southern crabgrass and annual lespedeza have very poor erosion control qualities, and they may not grow well in some years in response to adverse conditions. Reseeding annuals such as crabgrass and common lespedeza may be planted in a mix with perennial species. The portion of such a mix made up of reseeding annuals may not exceed 35 percent.

Perennial ryegrass does not tolerate heat and drought well; it tends to be very short-lived in Missouri, even shorter-lived in South Missouri. It shall only be planted where forage of very high quality is essential for the intended purpose. Perennial ryegrass shall not exceed 35 percent of a mixture. Plan for frequent reseeding.

Kura Clover is better adapted to North Missouri. It is slow to establish; including one pound of red clover in the mix will increase yields the first two years.

### **Additional Criteria for Establishing Adapted and Compatible Species, Varieties or Cultivars for Forage Production**

Select forage species and cultivars based on the intended use, realistic expected yield, maturity stage, compatibility with other species and level of management willing to provide. Plant adaptation to the proposed planting area shall be verified prior to planting.

### **Additional Criteria for Improving or Maintaining Livestock Nutrition and/or Health**

Establish forage species and cultivars that are most capable of meeting the desired level of nutrition (quantity and quality) for the kind and class of the livestock to be fed.

### **Additional Criteria for Balancing the Forage Supply and Demand during Low Forage Production Periods**

Select plants that will produce forage for use during periods when it is recognized that other on-farm/ranch forage does not meet livestock needs. Forage species and cultivars selected shall help balance the nutritional demand of the animals for the desired period of time.

### **Additional Criteria for Reducing Erosion and Improving Water Quality.**

Plants shall provide adequate ground cover, canopy cover, root mass and vegetative retardance to protect soil against wind and water erosion.

### **Additional Criteria to Increase Carbon Sequestration**

For optimal carbon storage, select species that increase site biomass production.

## **CONSIDERATIONS**

Establish persistent species that can tolerate close grazing and trampling in areas frequented by a high density of animals such as around water sources, loafing areas, and mineral or feeding locations.

Where wildlife management is an objective, use the Missouri Wildlife Habitat Appraisal Guide (MO-WHAG) or other approved habitat evaluation procedure to aid in selecting plant species and providing for other habitat requirements.

Where air quality concerns exist, site preparation techniques should be utilized that will minimize airborne particulate matter generation and transport.

## **PLANS AND SPECIFICATIONS**

Specifications for the establishment of pasture and hay planting shall be prepared for each site or management unit according to the Criteria and Considerations described in this standard and Missouri NRCS Agronomy Specification for Vegetation Establishment, Herbaceous Seeding 723, and shall be recorded on specification sheets, job sheets, in

narrative statements in the conservation plan, or other acceptable documentation.

#### **OPERATION AND MAINTENANCE**

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

Invasion by undesirable plants shall be controlled by one or more of the following: cutting, using a selective herbicide, biological control methods, 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 determine management inputs needed to achieve the desired purpose(s).

For post-establishment management follow criteria in the Prescribed Grazing (528) standard for pastures and the Forage Harvest Management (511) standard for hay land.

Follow the criteria in the NUTRIENT MANAGEMENT (590) practice standard to apply fertilizer and lime for stand maintenance.