

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**FORAGE AND BIOMASS PLANTING**

(Ac.)  
CODE 512

### DEFINITION

Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production.

### PURPOSE

- Improve or maintain livestock nutrition and/or health.
- Provide or increase forage supply during periods of low forage production.
- Reduce soil erosion.
- Improve soil and water quality.
- Produce feedstock for biofuel or energy production

### CONDITIONS WHERE PRACTICE APPLIES

This practice applies all lands suitable to the establishment of annual, biennial or perennial species for forage or biomass production. This practice does not apply to the establishment of annually planted and harvested food, fiber, or oilseed crops.

### CRITERIA

#### General Criteria Applicable to All Purposes

Select plant species and their cultivars based on:

- Climatic conditions, such as annual precipitation and its distribution, growing season length, temperature extremes and the USDA Plant Hardiness Zone.
- Soil condition and landscape position attributes such as; pH, available water holding capacity, aspect, slope, drainage class, fertility level, salinity, depth, flooding

and ponding, and levels of phytotoxic elements that may be present.

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

Follow recommendations for planting rates, methods and dates obtained from Wyoming Plant Material Technical Notice #3.

Select forage species based on the intended use, level of management, realistic yield estimates, maturity stage, and compatibility with other species. Recommended species can be found in NRCS Field Office Technical Guide Section II Forage Suitability Group. Adapted varieties are found in Wyoming Plant Material Technical Notice #3.

Follow Wyoming Plant Material Technical Notices 14 and 15 for seedbed preparations and implementation.

All seed and planting materials will meet state quality standards. Do not plant federal, state, or local noxious species.

The application of nutrients are not generally recommended until after establishment.

When planting legumes, use pre-inoculated seed or inoculate with the proper viable strain of Rhizobia immediately before planting.

Exclude livestock until the plants are well established.

Evaluate the site's potential for invasion by undesirable plants during practice planning and design. Monitor planted and adjacent areas to enable early detection and control of invasive plants.

This practice **is not** applicable where its use could reduce the quality of existing sage-grouse (SG) habitat.

Utilize the following table to determine practice restrictions based on SG lek proximity.

Practice Implementation Criteria	Practice distance from SG lek	
	Core	Non-Core
Initiate High Priority joint planning (NRCS/WGF MOU) through the Regional Wildlife Coordinator to ensure compliance with the Governor's Executive Order.	<0.6 mi.	< 0.25 mi
Practice activities will not be conducted from March 15 to June 30 to avoid disturbance to breeding and nesting SG.*	>0.6 mi.	0.25 – 2.0 mi
No SG restrictions	NA	>2.0 mi.

\*Activities conducted in unsuitable habitat (as defined by the Governor's Executive Order 2010-4) or that are clearly beneficial to SG may be subject to less restrictions consistent with WGF case by case recommendations.

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

Use forage species that will meet the desired level of nutrition (quantity and quality) for the kind and class of the livestock to be fed.

Forage species planted as mixtures will exhibit similar palatability to avoid selective grazing.

#### **Additional Criteria for Providing or Increasing Forage Supply During Periods of Low Forage Production**

Select plants that will help meet livestock forage demand during times that normal farm/ranch forage production are not adequate.

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

Ground cover and root mass need to be sufficient to protect the soil from wind and water erosion. Establish vegetation so plant canopy is four to six inches in height before the first killing frost.

#### **Additional Criteria for Producing Feedstocks for Biofuel or Energy Production**

Select adapted plants that provide adequate kinds and amount of plant materials needed.

## **CONSIDERATIONS**

In areas where animals congregate consider establishing persistent species that can tolerate close grazing and trampling.

Consider including big sage when seeding suitable pasture sites that could serve as sage-grouse habitat.

Where wildlife and pollinator concerns exist, consider plant selection by using an approved habitat evaluation procedure and Plant Material references.

Where air quality concerns exist consider using site preparation and planting techniques that will minimize airborne particulate matter generation and transport.

Where carbon sequestration is a goal; select deep-rooted perennial species that will increase underground carbon storage.

During and upon stand establishment planning and application of the following conservation practices should be considered as applicable; Forage and Harvest Management (511), Herbaceous Weed Control (315), Nutrient Management (590), and Prescribed Grazing (528).

## **PLANS AND SPECIFICATIONS**

Prepare plans and specifications for the establishment planting for each site or management unit according to the Criteria, Considerations, and Operations and Maintenance described in this standard. Record them on a site specific job sheet or in the narrative of a conservation plan.

The following elements will be addressed in the plan to meet the intended purpose:

- Site Preparation
- Fertilizer Application (if applicable)
- Seedbed/Planting Bed Preparation
- Methods of Seeding/Planting
- Time of Seeding/Planting
- Selection of Species
- Type of legume inoculant used (if applicable)
- Seed/Plant Source

- Seed Analysis
- Rates of Seeding/Planting
- Supplemental Water for Plant Establishment (if applicable)
- Protection of Plantings (if applicable)

Monitor soil profile moisture and practice good irrigation water management. Companion crops or nurse crops are not recommended unless irrigation is available and a reduced seeding rate is used. new plantings for water stress. Depending on the severity of drought, water stress may require reducing weeds, early harvest of any companion crops, irrigating when possible, or replanting failed stands.

## **OPERATION AND MAINTENANCE**

Inspect and calibrate equipment prior to use. Continually monitor during planting to insure proper rate, distribution and depth of planting material is maintained.

## **REFERENCES**

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Barnes, R.F., D.A. Miller, and C.J. Nelson. 1995. Forages, The Science of Grassland Agriculture, 5<sup>th</sup> Ed. Iowa State University Press, Ames

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