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 to 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 the plant materials program, land grant and research institutions, extension agencies, or agency field trials. Use these specific recommendations which are summarized in Grazing Technical Note #1.

Seeding rates will be calculated on a pure live seed (PLS) basis.

Plant at a depth appropriate for the seed size or plant material, while assuring uniform contact with soil.

Prepare the site to provide a medium that does not restrict plant emergence.

Plant when soil moisture is adequate for germination and establishment.

All seed and planting materials will meet state quality standards.

Do not plant federal, state, or local noxious species.

Apply all plant nutrients and/or soil amendments for establishment purposes according to a current soil test. Application rates, methods and dates are obtained from the plant materials program, land grant and research institutions, extension agencies, or agency field trials.

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.

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Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact the MN Natural Resources Conservation Service in your area or download it from the electronic Field Office Technical Guide.

Select forage species based on the intended use, level of management, realistic yield estimates, maturity stage, and compatibility with other species. Verify plant adaptation to the area prior to planting.

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.

Additional Criteria for Producing Feedstocks for Biofuel or Energy Production

Select 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.

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

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 Biomass Harvest (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 inoculants used (if applicable)
- Seed/Plant Source
- Seed Analysis
- Rates of Seeding/Planting
- Supplemental Water for Plant Establishment (if applicable)
- Protection of Plantings (if applicable)

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.

Monitor 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.

Invasion by undesirable plants will be controlled by cutting, use of a selective herbicide, prescribed burning, grazing management through manipulation of stocking rates, density, and duration of stay.

Insects and diseases shall be controlled when an infestation exceeds economic injury levels.

REFERENCES

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