

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 for 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, Cornell University, extension agencies, or agency field trials.

Seeding rates will be calculated on a pure live seed (PLS) basis. For seed with seed tests of germination above 85 percent and dormant and hard seed below 15 percent (most cool season grasses and legumes) the seeding rates can be calculated on a bulk seed basis.

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

Prepare the site to provide a medium that does not restrict plant emergence, avoid working when soils

are wet.

Plant when soil moisture is adequate for germination and establishment.

All seed and planting materials will meet state quality standards.

Certified seed should be used in general, especially for species that have cultivars with differing areas of adaptation to ensure getting the variety adapted to the area.

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.

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.

Erosion and Sediment Control

An erosion and sediment control plan shall be developed for all disturbed areas. For disturbed areas greater than one acre, the erosion and sediment control plan shall meet the planning, installation, and maintenance requirements of NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges. All erosion and sediment structures and measures shall be installed prior to earth disturbing activities unless otherwise directed in the construction drawings.

CONSIDERATIONS

In areas where animals congregate, consider establishing persistent species tolerant of close grazing and trampling.

Consider planting species that provide wildlife and pollinator habitat.

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 the 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 Selection

- site preparation and weed control,
- 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 origin,
- seed analysis,
- rates of seeding/planting,
- supplemental water for plant establishment (if applicable), and
- protection of plantings (if applicable).

OPERATION AND MAINTENANCE

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

Monitor new plantings for water stress. Depending on drought severity, water stress may require reducing weeds, early harvest of any companion crops, irrigating when possible, or replanting failed stands.

REFERENCES

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United States Department of Agriculture, Natural Resources Conservation Service (1997). National Range and Pasture Handbook. Washington, DC.

USDA, NRCS (2008). The PLANTS Database (<http://plants.usda.gov>, 08October 2008). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

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