

NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC BASIN AREA
CONSERVATION PRACTICE STANDARD

PASTURE AND HAY PLANTING

(Hectare, Acre)
CODE 512

DEFINITION

Establishing native or introduced forage species

PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

- Establish adapted and compatible species, varieties, or cultivars;
- Improve or maintain livestock nutrition and/or health;
- Extend the length of the grazing season;
- Provide emergency forage production;
- Reduce soil erosion by wind and/or water; and,
- Provide fodder and shelter for wildlife.

CONDITIONS WHERE PRACTICE APPLIES

This practice may be applied on cropland, hayland, pastureland, and other agricultural lands where forage production is feasible and desired.

CRITERIA

General criteria is applicable to all the purposes stated above. Plant species and their cultivars shall be selected based upon:

1. Climatic conditions, such as annual rainfall, seasonal rainfall patterns, growing season length, humidity levels, temperature extremes and the USDA Plant Hardiness Zones. For species selection see appropriate Pacific Basin plant references, Pacific Basin FOTG, Section I.
2. Soil condition and position attributes such as pH, available water holding capacity, aspect, drainage class, inherent fertility, salinity and alkalinity, flooding and

ponding. For a general adaptation between forages, climate and soil conditions see FOTG, Section II.

3. Plant resistance to disease and insects common to the site or location.
4. Plant compatibility with other forage species and their selected cultivar(s) in rate of establishment, maturity, and growth habit when seeded together as a forage mixture. For plant compatibility consult plant and grazing references listed in FOTG Section I - References.

Apply fertilizer according to soil test recommendations for planting and establishment. In the absence of soil test, apply a minimum of 60 lbs. per acre (71 Kg/Ha) phosphorous as P2O5 .

The seeding/plant material rates, methods of planting and dates of planting specified shall be consistent with guidance provided by research institutions or NRCS. Documentation citing the source of information in the specification is required. For seeding/plant material rates see FOTG Section II.

Seeding rates will be calculated on a Pure Live Seed (PLS) basis or percent germination. Provide a firm, weed-free seedbed that ensures seed will contact soil moisture uniformly, facilitates seedling emergence, and provides a medium that does not restrict or allow roots to become dry.

All seed and planting materials shall be labeled and meet local and federal seed quality standards. Where legume seed is to be planted, the need for inoculation with the proper, viable rhizobium shall be considered before planting.

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Additional Criteria for Improving or Maintaining Livestock Nutrition and/or Health.

Forage species must be capable of meeting the desired level of nutrition for the kind and class of the livestock to be fed.

Additional Criteria for Extending the Grazing Season.

Forage species selected for establishment shall fulfill a recognized dietary deficiency within the year-long forage management program.

Additional Criteria for Providing Emergency Forage Production.

Select plants that will produce forage for use during periods when other on-farm/ranch forage is unavailable to meet livestock needs.

Additional Criteria for Reducing Erosion by Water.

Plants shall have the ability to provide adequate ground cover, canopy cover, root mass, and vegetal retardance to wind forces and water flows either alone or in combination with other forage species when site conditions require erosion protection.

When erosion control is a consideration, plant a cover crop variety at the time of stand establishment that is appropriate for the site and at a rate that will not adversely compete with the desired pasture specie.

CONSIDERATIONS

Appropriate Pacific Basin practices may be used in combination with Pasture and Hay Planting.

This practice may adversely affect cultural resources. Planning, installation and maintenance must comply with GM 420, Part 401.

Where wildlife management is an objective, the food and cover value of the planting can be enhanced by using an approved habitat evaluation procedure to aid in selecting plant species and providing for other habitat requirements necessary to achieve the objective. Use an approved wildlife management evaluation procedure to aid in

selecting plant species and providing for other habitat requirements necessary to achieve the objective.

Forage species planted in the mixture should exhibit similar palatability characteristics to avoid spot or selective grazing.

PLANS AND SPECIFICATIONS

Specifications for the establishment of pasture and hay plantings shall be prepared for each site or management unit according to the Criteria, Considerations, and Operations and Maintenance described in this standard, and shall be recorded on specification sheets, job sheets, in narrative statements in the conservation plan, or other acceptable documentation.

Specifications shall include seeding or vegetative planting rates, establishment dates, fertilizer and lime requirements, planting method, and cover crop or mulch, if needed. Fertilizer recommendations should be based on a soil test. Specify deferred grazing period necessary to insure stand establishment and adequate forage for intended livestock.

Specify the irrigation application rates and frequency for establishment in the event of inadequate rainfall. Include any recommendations for weed control necessary to ensure desired cover establishment.

OPERATION AND MAINTENANCE

Land preparation: Depending on the purpose, clear the land mechanically or use heavy stocking rates. Machinery is recommended for large areas. Non-tillage or minimum tillage practices are preferred. To plant in rows, prepare a seedbed by plowing and harrowing. Generally two plowings followed by two harrow passes are satisfactory for pasture and hayland. Should liming be required, apply it before the second plowing so that it will be mixed into the soil.

Planting: Planting and tillage operations must be done on the contour as much as possible or at least across the predominate slope of the land. Planting dates should occur during the rainy season or any other time if soil moisture is not a concern.

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Pre-emergence herbicide application is appropriate only if vegetative material such as cuttings or sprigs are used. Do not apply herbicides to the seed as pre-emergent. When large quantities of insects are present in the fields at planting, and their control is not feasible, increase the rate of seed (seed not vegetative material) by 10 percent. Sometimes birds and rodents can also be a pest after planting seed.

When complete land preparation is not possible, graze the area heavily and broadcast the seed. If quick establishment is desired, consider the use of scarified seed when appropriate for the seed variety. If vegetative material is to be used in steep lands or using no-till practices, plant in holes following guidance provided in locally developed technical notes, if developed.

Time for Establishment: Allow 4 to 5 months for establishment of all grasses or legumes before grazing or cutting. A light grazing/browsing, about 2 to 3 months after planting, may increase shoot development. Overgrazing is detrimental.

Growth of seedlings or sprigs shall be monitored for water stress (deficit or excess). Water stress may require reducing weeds, early harvest of any companion crops, irrigating when possible or replanting failed stands, depending on the severity of drought or flooding. In general, grasses require 1.5 inches (38 mm.) of water weekly for optimum performance. If it is not raining, irrigation is advisable. Refer to Pacific Basin standard, Irrigation Water Management (449).

Invasion by undesirable plants shall be controlled by cutting, using a selective herbicide, or by grazing management by manipulating livestock stocking rates, density, and duration of stay. Observe proper grazing heights. Refer to Pacific Basin standard, Prescribed Grazing (528A).

Insects and diseases shall be controlled when an infestation threatens stand survival. Refer to Pacific Basin standard, Pest Management (595).

Repair or re-establish bare spots or poor stand areas as soon as practical to control

erosion and weed invasion and provide desired forage.