**NATURAL RESOURCES CONSERVATION SERVICE**
**CONSERVATION PRACTICE STANDARD**

# PASTURE AND HAY PLANTING

**(Acre)**
**CODE 512**

## DEFINITION

Establishing native or introduced forage species.

## PURPOSES

This practice may be applied as part of a resource 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 health.
- Balance forage supply and demand during periods of low forage production.
- Reduce soil erosion and improve water quality.
- Increase carbon sequestration.

## 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 applicable to all of the purposes stated above**

Select plant species and cultivars based on:

- Climatic conditions, such as annual rainfall, length of growing season, temperature extremes, and the USDA Plant Hardiness Zone.
- Soil conditions and landscape position attributes such as pH, available water holding capacity, inherent fertility, aspect, drainage class, and incidence of flooding and ponding.
- Plant resistance to disease and insects common to the area.
- Plant compatibility with other forage species and their selected cultivars in method of planting, maturity, and growth habit when seeded together as a forage mixture.
- Intended level of management.

For seeding/plant material rates, planting depth, area of adaptation, and date of planting, follow the guidelines in Table 1 of the Pasture and Hay Planting Job Sheet (512), or UGA-CES, Circular 814, *Planting Guide to Grasses and Legumes for Forage and Wildlife in Georgia*.

Calculate seeding rates on a pure live seed (PLS) or percent germination basis. See Pasture and Hay Planting Job Sheet (512), page 3.

Provide a firm, weed-free seedbed that ensures seed will contact soil uniformly, facilitates seedling emergence, and provides a medium that does not restrict root growth.

Use conservation or no-till planting methods to establish forage plants on land subject to erosion, and to conserve soil moisture and organic matter.

Apply all plant nutrients according to a current soil test recommendation.

When planting legumes, correct soil pH deficiencies 6 months to 1 year in advance of the planned planting date. Maintain recommended soil pH levels throughout the life of the stand.

Inoculate legume seed with the proper, viable strain of Rhizobium before planting.

All seed and planting materials must meet or exceed Georgia seed quality law standards for germination, purity and noxious weed seed limitations.

**Additional criteria for improving or maintaining livestock nutrition and health**

Use species that meet the nutritional needs of the kind and class of livestock being fed.

**Additional criteria for balancing forage supply and demand during periods of low forage production**

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

**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 increasing carbon sequestration**

To maximize carbon storage, select species with high below- and above-ground biomass production.

## CONSIDERATIONS

**To extend the length of the grazing season**

A system that utilizes cool- and warm-season species such as tall fescue and bermudagrass can significantly reduce hay requirements. See Pasture and Hay Planting Job Sheet (512) for commonly used mixtures.

Overseeding warm-season perennial grasses with cool-season annual grasses and legumes can provide high quality grazing in winter and early spring. Harvest excess growth of cool-season annuals for hay to reduce competition with warm-season forages.

Overseeding failures may be caused by: 1) failure to remove excess growth of the summer crop before planting winter annuals, 2) failure to establish good seed to soil contact, or 3) lack of adequate soil moisture or fertility.

**Other considerations**

Prescribed Burning, Prescribed Grazing, Forage Harvest Management, Nutrient Management, Pest Management, and Wildlife Upland Habitat Management practices may be used in combination with Pasture and Hay Planting.

Annual nitrogen application rates higher than 50 – 75 pounds actual N per acre may reduce legume stands in grass-legume mixtures.

Use a cultipacker, or other rolling implement, to ensure good seed to soil contact when establishing news stands on a prepared seedbed.

Pesticides may be needed during establishment. The University of Georgia Cooperative Extension Service publishes recommendations for applying pesticides. Contact your local Cooperative Extension Service office for the most current pesticide information and recommendations.

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. Refer to Georgia Wildlife Habitat Evaluation for Resource Management Systems – Pastureland Habitat Index. Contact the NRCS Biologist for assistance.

Forage species planted in mixture should exhibit similar palatability to one another to help avoid selective grazing.

Mixed stands of cool-season perennial grasses and legumes provide high quality grazing in late winter and spring with no or little nitrogen fertilizer, and can help offset the negative effects of endophyte-infected tall fescue on livestock.

Longevity of legumes in grass pastures is enhanced by monitoring grazing height to reduce competition between grasses and legumes, and by allowing reseeding legumes to reach reproductive maturity. Legumes should be replanted when they comprise < 15% of the stand.

## PLANS AND SPECIFICATIONS

Prepare plans and specifications for the establishment of pasture and hay plantings 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 the conservation plan.

At a minimum, plans and specifications should include:

1. size and location of the area to be planted,
2. species to be planted,
3. seeding or planting rate per acre (adjust rates for planting method, seedbed condition, and forage mixtures),
4. date and method of planting,
5. type of seedbed preparation required,
6. nutrients and lime to be applied,
7. and operation and maintenance required.

## OPERATION AND MAINTENANCE

Do not graze or harvest until the plants are well established. Avoid grazing young plants during wet weather when they are easily pulled from the ground. Do not graze or mow perennial forages closer than 3 - 4" from the soil surface during the first growing season.

Monitor new plantings for water stress. Depending on the severity of drought, management may include reducing weed pressure, early harvest of any companion crops, irrigation, or replanting failed stands.

Harvest or grazing management should be adjusted according to plant growth and stand vigor.

Utilize a pest management plan that includes cultural, biological, and chemical methods.

## REFERENCES

*Forages, Fifth Edition Volume I: An Introduction to Grassland Agriculture*.1995. R.F. Barnes, D.A. Miller, and C.J. Nelson. Iowa State University Press, Ames, IA.

*Forages, Fifth Edition Volume II: The Science of Grassland Agriculture*.1995. R.F. Barnes, D.A. Miller, and C.J. Nelson. Iowa State University Press, Ames, IA.

*Southern Forages*, Fourth Edition, 2007. D.M. Ball, D.S. Hoveland, and G.D. Lacefield. International Plant Nutrition Institute, Norcross, GA.