NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATIONS
FORAGE AND BIOMASS PLANTING

GENERAL SPECIFICATIONS

Procedures, technical details, and other information listed below provide additional guidance for carrying out selected components of the Conservation Practice Standard for Forage and Biomass Planting.

The current version of the Agronomy Technical Note 1 will be used to recommend seeding rates, seeding dates, seeding depth, drainage adaptation, and MLRA regions of adaptation for the selected plant species.

SPECIES SELECTION

Species must be suited to the site and meet the desired purpose of the practice. The plant species selected must have the ability to treat the identified resource concern. Site specific considerations to evaluate when selecting a plant species includes tolerance to: 1) Soil Acidity, 2) Poor Drainage, 3) Drought, 4) Grazing Pressure, 5) Shade, and 6) Disease/Pests.

SEEDING RATES

The seeding rates for each plant species will be found in the Arkansas Agronomy Technical Note 1 for grazing, hay, or biomass harvest. The seeding rate is the recommended rate to establish adequate ground cover. All seeding rates will be applied according Pure Live Seed (PLS) rates.

SITE PREPARATION

Weed Control – Competitive vegetation will be controlled on the site prior to seeding. Mechanical, chemical, or biological means will be employed to remove, control, or retard undesirable vegetation. Herbicides may be used to in the existing cover for an interseeding establishment. Always read and follow the herbicide label directions.

Depending upon the existing site conditions, strategies to suppress existing competitive vegetation may need to begin months prior to establishment.

Surface Conditions – On highly erodible soils, no-till establishment should be considered to prevent erosion loss of topsoil.

SEEDING METHODS AND SEEDBED PREPARATION

Using a no-till drill to seed grasses or legumes into an existing stand – Site specific considerations should be evaluated for the site preparation. Using a no-till drill to plant seed into an existing stand without any mechanical, chemical, or biological treatment for existing residue and/or vegetation isn't recommended. Utilizing a high stock density of livestock prior to planting can be effective to reduce existing vegetation. Chemical burn-down of competing vegetation is recommended for no-till planting. Herbicides or a prescribed burn used to weaken the stand is also effective.

Ensure the no-till drill is designed to handle the type of seed being planted (especially important for fluffy native grass seed that has not been debearded).

Refer to the University of Arkansas Cooperative Extension Service publication *Calibrating Drills and Broadcast Planters for Small-Seeded Forages FSA3111* for recommendations on calibrating drills.

Using minimum tillage to seed grasses or legumes into an existing stand - Some forages, such as annual ryegrass or clover, may be planted with minimum tillage. Minimum tillage includes suppression of existing vegetation, light disking, broadcasting seed, and dragging the field. The primary intent is to enhance seed to soil contact.

Utilizing a high stock density of livestock prior to planting can be effective to reduce existing vegetation.

Refer to the University of Arkansas Cooperative Extension Service publication *Calibrating Drills and Broadcast Planters for Small-Seeded Forages FSA3111* for recommendations on calibrating seeders.

Using conventional tillage strategies to plant grasses - Site specific considerations should be evaluated prior to conventional tillage which includes 1) potential erosion concerns, 2) present and anticipated soil moisture, 3) soil type, 4) topography, and 5) maintenance after establishment. Below are general recommendations for seedbed preparation for conventional tillage:

- Plow the area 4-6 inches deep, assuming the field is free of rocks and erosion potential is minimal. If not, consider using a no-till drill rather than plowing.
- Disk the area 3-4 times to pulverize the soil thoroughly.
- Drag, roll or cultipack the area to smooth and firm the soil prior to planting.
- The area planted should be rolled after the seed is broadcast or after sprigging to obtain good seed- sprig/soil contact

Frost Seeding

Certain species of legumes can be "frost seeded" in late winter. The freezing and thawing of soil helps to incorporate the legume seed into the soil surface.

Ensuring appropriate seed to soil contact is essential. Pastures should be adequately grazed or clipped in the fall to better expose the soil. Ideally, the soil surface should still be frozen. The seed will be broadcasted onto the soil. Dragging the fields or the hoof action of livestock can be effective on increasing seed to soil contact.

Graze pastures in a rotation to allow for the seeding to become established.

SEED PLACEMENT

Seed placement is critical for a successful establishment. Placing the seed too deep is a very common reason for establishment failure. No-till drills should be calibrated and appropriate measures should be taken to assure seeds are placed at the appropriate depths.

SOIL FERTILITY AND LIME

Fertilizer and lime will be applied according to soils test results. The soil amendments must be applied according to the appropriate crop code. Applying lime at least six months prior to planting allows additional time for the soil pH to adjust. The time to adjust pH is dependent on many factors. Certain situations will result in a longer duration for the pH to adjust to the application of lime.

The application of fertilizer and soil amendments shall be based on a current soils test (less than 3 years old) that was collected since the last application of liming material or fertilizer.

SEED QUALITY

Only viable, high quality and adapted seed will be used. All seed shall have a current seed test that lists germination, purity, and hard seed as a percentage for determining pure live seed and lists the percent of weed seed present that meets State seed quality law standards. Seed must be clean and relatively free of weed seed and other contaminants. Seed that has become wet, moldy, or otherwise damaged in transit or storage is not acceptable. Refer to the Arkansas Agronomy Technical Note 1 for detailed specifications.

FORAGE LEUME INOCULATION

Legume seed shall be inoculated or pre-inoculated with the proper, viable *Rhizobium* bacteria species prior to planting according to University of Arkansas Cooperative Extension Service "Forage Legume Inoculation" FSA2035.

OPERATION AND MAINTENANCE

Noxious weeds and any plant species whose presence or overpopulation may jeopardize the practice, or have detrimental effects to the surrounding land, will be controlled.

If prescribed burning is used to for any phase of establishment or management of the planting, an approved burn plan must be developed.

Apply supplemental nutrients as needed to maintain the desired species composition and stand density.

GRAZING OR HARVEST MANAGEMENT AFTER PLANTING

The seeded forages will not be grazed or harvested until the seeded forages are well established. A prescribed grazing plan will be followed if competing vegetation will be controlled with grazing. Flash grazing for a very short duration (e.g. less than a day) can be effective. Site specific recommendations should be provided to the participant. Additionally, mowing above the height of the desired forage is allowed to control competing vegetation.

GRAZING MANAGEMENT AFTER ESTABLISHMENT

Participants are encouraged to follow a prescribed grazing plan to provide adequate rest to the established forages. Implementing a rotational grazing system and following recommendations from a prescribed grazing plan will result in greater management of the established forage. Overgrazing is a major cause of weaken or failed forages in pastures.

WEED CONTROL DURING ESTABLISHMENT PERIOD

Apply mechanical, chemical, or biological treatments as needed to control unwanted vegetation. Mow when competing weeds are taller than the planted vegetation, and at a height above the planted vegetation. Use selective herbicides and/or spot spraying to protect the desired species. Refer to the University of Arkansas Cooperative Extension Service publication – *Recommended Chemicals for Weed and Brush Control MP44* for herbicide timing and treatment.