

Louisiana Job Sheet: Pasture and Hay Planting (512)

This job sheet is a planning tool and provides guidelines for planting native and introduced forage species on pasture or hay land. Proper species selection, seedbed preparation, and planting techniques are required to ensure the establishment of a productive pasture or hay field.

Criteria and Considerations

Plant species selection

The following criteria will be used to select the most appropriate species (cultivar or variety) for planting.

- climatic conditions: annual and seasonal rainfall, growing season length, temperature extremes, and USDA Plant Hardiness Zones,
- soil physical and chemical conditions: pH, available water holding capacity, inherent fertility, salinity, alkalinity, drainage
- topographic position
- plant resistance to disease and insects common to the site or location.
- plant compatibility with other forage species and their selected cultivar(s) in rate of establishment, maturity, and growth habit when seeded together in a forage mixture.
- compatibility of yield and season of growth to the desired level of nutrition for the kind and class of livestock.
- Specified seeding/plant material rates, methods of planting and date of planting will be consistent with documented guidance cited by research institutions or agency demonstration trials for achieving satisfactory establishment

Seed quality and quantity

1. All seed and planting materials will be labeled and meet state seed quality law standards. Vegetative material, such as roots, can be obtained on farm, if available, or from a reputable source.
2. Seeding rates will be determined based on pure live seed (PLS) or percent germination information found on the seed tag. PLS can be computed using decimal values with the following equation.

$$\frac{[(\text{Percent germination} + \text{Percent hard seed}) * \text{Percent purity}]}{100}$$

Seedbed preparation

1. Landscape features and other obstructions that prevent surface drainage or interfere with safe and efficient operation of equipment should be removed. The land to be seeded should be as smooth as possible.
2. Adequate surface drainage must be provided on soils that are class IIIw or wetter. Grade the soil to allow for drainage of excess water and to eliminate surface ponding.
3. For establishment of permanent pasture, alleviate soil compaction prior to seeding. A chisel plow or subsoiler should be used to till to depths of greater than eight inches when a hardpan, traffic pan, plowpan, or other root restricting layer. Soil conditions must be dry during this process to fracture compacted soil layers and to avoid causing increased soil compaction. On uncompacted soils, disk to a depth of three inches.
4. Seedbed preparation should kill existing undesirable plants and smooth the area. Prior to planting the desired vegetation, lightly disk, harrow, sweep, or use chemicals to kill existing vegetation. The seedbed should be smooth and firm at planting time.

Planting/vegetative establishment

1. Seeding may be done with a drill or by broadcasting according to Table 1 and 2. Drill seeding will require less seed. The seed should have good contact with the soil. When broadcasting, cultipacking or some other method that firms the soil around the seed will be used.
2. Sprigs will be planted in rows not to exceed 42 inches and firmly covered one to three inches deep (Table 1). Sprigs will not be cut, chopped, or allowed to dry out. Planting must be done in moist ground.
3. Green hay plantings will be done by broadcast or planted in rows not to exceed 44 inches apart. Green hay will not be allowed to dry out prior to planting. Planting will be done in moist ground. Cultipacking or some other method that firms the soil around the vegetative material should be used.

4. Annual forages can be planted into a prepared seedbed by broadcasting or drilling. Annuals can be overseeded or planted with a no-till drill into an existing sod or stale seedbed.
5. Establishment will be considered successful when an average of 60% cover is comprised of desirable species.

Fertilizer and Lime

1. Fertilizer rates will be based on a current soil analysis (see 590-Nutrient Management). A variation of 25% above or below the specified amount of fertilizer for establishment is allowable. For planning purposes, the establishment rate from a soil test report or a ratio of 50-72-72 will be used.
2. The full fertilizer rate may be applied at planting or during the final stages of seedbed preparation. Or, all the phosphorus and potash and half of the nitrogen can be applied at planting with the remainder of the nitrogen to be applied when sod grasses begin to run and bunch grasses reach the 5-leaf stage.
3. Lime may be needed for adequate grass growth or for legume establishment in acid soils. Legume seed and fertilizer will not be broadcast together because the fertilizer will kill the legume inoculant.

PLANS AND SPECIFICATIONS

The specifications for the establishment of pasture and hay planting will be prepared for each site or management unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard, and will be recorded on this job sheet. They may also be recorded in the narrative statements of the conservation plan.

OPERATION AND MAINTENANCE

1. Growth of seedlings or sprigs will be monitored for water stress. Such stress may require reducing weeds, early harvest of nurse crops, irrigation, or replanting of failed stands. Weed control can be accomplished through any of several methods.
2. Chemicals used must be Federally and locally registered and must be applied in accordance with authorized registered uses, directions on the label, and other Federal and State policies and requirements. Seeded species should have 3 to 5 leaves per plant before herbicides are applied.

Generally, when three weeds per square foot or a 50 % weed canopy is observed control should be considered.

3. Weeds should be mowed when they reach a height of 6 to 8 inches. Mowing should be above the height of the seeded species. Mowing should not be done after July 15 to prevent dehydration of the young plants.
4. Flash grazing by livestock may be used to control annual grasses and forbs, but extreme caution should be used to avoid selective grazing of highly palatable planted species. This method will not be used after July 15, except when abnormal summer moisture promotes excessive weed growth. Flash grazing will not be used when the soil is wet to avoid damage to young plants from hoof action.
5. Insects and diseases will be controlled when an infestation threatens stand survival.

Table 1. Planting dates, depths, and rates for establishing grasses for pasture or hay land.

Species/Cultivar	Planting Date	Planting Depth (in.)	Planting Rates*	Adaptation
Perennial grasses				
Bahiagrass – Argentine, Pensacola, Tifton 9	3/1-6/1 ¹	¼ to ½	15 lbs/ac	Sandy soils, not recommended for heavy clay soils, pH 5.5-6.5, Drought tolerant
Common Bermudagrass (hulled seed)	3/1-6/1 ¹	¼ to ½	5 lbs/ac	All soils, extremely drought tolerant
Bermudagrass (sprigs) – Alicia, Brazos, Coastal, Grazer, Tifton 44, Tifton 85, Russell, Jiggs, Sumrall ⁴	3/1-6/1 ¹	1 to 3	2	All soils, extremely drought tolerant
Bermudagrass (green hay) - Alicia, Jiggs, Grazer, Brazos, Russell, Sumrall ⁴ , “Little Phillip I” ⁵	3/1-6/1 ¹	¼ to 2	3	All soils, extremely drought tolerant
Dallisgrass	3/1-6/1	¼ to ½	5 lbs/ac	Best adapted to moist, fertile clay and loam soils. Drought tolerant.
Switchgrass – Alamo, Blackwell, Cave-in-Rock, Shelter	2/1-5/1 ⁶	¼ to ½	4 lbs/ac	Best adapted to fertile well-drained soils. Will tolerate poorly drained soils.
Eastern Gamagrass – Pete, Iuka, Iuka IV, Jackson	2/1-5/1 ⁶	¾ to 1 ¼	8 lbs/ac	Best adapted to moist, well-drained fertile soils. Does not tolerate standing water for long periods.
Tall fescue – Kentucky-31, Georgia 5, Jesup	9/1-11/1	¼ to ½	30 lbs/ac	Best adapted in clayey or loamy soils. Tolerant of acidity and poor drainage. Relatively tolerant of drought. Better adapted to northern Louisiana.
Annual grasses**				
Oats	9/1-11/15	1 to 2	90-120 lbs	Less cold tolerant when compared to other small grains but can also be planted earlier and produces more early growth. Adapted to all soils.
Cereal rye	9/15-11/15	1 to 2	90-120 lbs	Early maturing, good producer of fall, winter, and early spring growth. Adapted to all soils.
Annual ryegrass	10/1-11/15	0 to ½	20-30 lbs	Most widely used small grain for overseeding. Adapted to all soils.
Wheat	10/1-11/15	1 to 2	90-120 lbs	Most cold tolerant of the small grains, adapted to all soils.

*Rates are for broadcast plantings and can be reduced by 50% for drilled plantings. All planting rates should be applied on a Pure Live Seed (PLS) basis

**For cover crops use 50% of seeding rate.

¹ March 1 through June 1 is optimum, however, these grasses may be planted anytime during the growing season when soil moisture is adequate.

² Satisfactory stands of Alicia, Coastal, Jiggs, Tifton 44, Russell or Grazer can be obtained by using 12 – 15 bu/acre if planted by hand in rows three feet apart, 15 – 20 bu/acre if planted by machine in rows or 40 – 50 bu/acre if broadcast and disked into the soil. Since Brazos contains fewer sprigs per bushel use 20 - 25 bu/acre if planted in rows by hand, 25 – 30 bu/acre if planted by machine in rows or 50 – 60 bu/acre if broadcast and disked into the soil. Plant Sumrall at 20 – 30 bu/acre on a well-prepared seedbed in rows 2 – 3 feet apart.

³ A bale of green, uncured clippings (Alicia, Brazos, Jiggs, Grazer, or Russell) weighing 100 lbs will plant 2500 square feet when spread over the area. This equates to a planting rate of 1,750 lbs/acre. Plant Sumrall at 1400 lbs. acre. Plant Little Phillip I at 6 – 8 bales/ac (50-60 lbs/bale) in rows 44 inches apart or 10 bales/ac broadcast.

⁴ Recommended for Washington, St. Tammany, Tangipahoa, St. Helena, East and West Feliciana, East Baton Rouge, Livingston, St. John, St. Charles, Jefferson, Plaquemines, and St. Bernard Parishes.

⁵ Recommended for Sabine, Vernon, Beauregard, and Natchitoches Parishes.

⁶ February 1 through June 1 are for optimum conditions. However, unfavorable weather conditions during this time of year often delay seedbed preparation and planting. To avoid this, these species can also be planted in the fall. Maximum planting date range for these species is November 15 – June 1

Table 2. Planting dates, depths, and rates for establishing legumes for pasture or hay land.

Species/Cultivar*	Planting Date	Planting Depth	Planting Rate**	Adaptation
Alyceclover	5/1-7/15	¼ to ½ inch	30 lbs/ac	Best adapted to well-drained, sandy soils. Can tolerate soil acidity. Warm season annual.
Alfalfa – Cimarron VR	9/15-11/1	¼ to ½ inch	25 lbs/ac	Adapted to highly fertile, well-drained soils, near neutral pH, and a high level of management. Limited adaptation in Louisiana. Cool season perennial.
Arrowleaf Clover – Amclo, Meechi, Yuchi	9/15-11/15	¼ to ½ inch	8 lbs/ac	Adapted to well-drained soils, does not tolerate acidity or low fertility. Cool season annual. Optimum pH range 5.8 – 6.5.
Ball Clover	9/15-11/15	¼ to ½ inch	5 lbs/ac	Adapted to loamy to clayey soils. Will tolerate poor drainage. Cool season annual
Berseem Clover – Bigbee	9/15-11/15	¼ to ½ inch	20 lbs/ac	Adapted to alkaline and wet soils. Not winter hardy. Cool season annual.
Crimson Clover – Chief, Dixie, Tibbee	9/15-11/15	¼ to ½ inch	15 lbs/ac	Adapted to well-drained soils. Tolerates moderate soil acidity. Cool season annual.
Annual Lespedeza – Common, Kobe, Korean	3/1-5/1	¼ to ½ inch	25 lbs/ac	Adapted to a wide range of well-drained soils. Will grow on eroded, acid soils low in P. Optimum pH 6.0 – 6.5. Warm season annual.
Sericea Lespedeza – AULotan, Serala, Serala 76	3/1-4/15	¼ to ½ inch	30 lbs/ac	Adapted to clayey or loamy soils. Will not tolerate alkaline or poorly drained soils. Warm season perennial.
Red Clover – Kenland, Kenstar, Renegade, Cherokee, Concorde, Acclaim, Cinnamon	9/15-11/15	¼ to ½ inch	12 lbs/ac	Adapted to poorly drained acid soils. Fairly drought tolerant. Very high yielding. Cool season annual to biennial.
Subterranean Clover – Mt. Barker, Nangeela, Tallarook, Woogenellup	9/15-11/15	¼ to ½ inch	15 lbs/ac	Best adapted to well-drained soils. Tolerant of acid soils. Cool season annual.
Vetch	9/15-11/15	¼ to 1 inch	20 lbs/ac	Best adapted to well-drained soils. Tolerant of acid soils. Cool season annual.
White or Ladino Clover – Louisiana S-1, Osceola, Regal, Canopy, California	9/15-11/15	¼ to ½ inch	5 lbs/ac	Best adapted to well-drained silt loam and clay textured soils. Not suited to droughty or alkaline soils. Optimum pH 6 – 7. Cool season perennial.
Austrian Winterpea	9/15-11/15	¼ to 1 inch	30 lbs/ac	Adapted to well-drained loam or sandy loam textured soil. Intolerant of highly acid soil. Cool season annual.
Singletary Pea	9/15-11/15	¼ to 1 inch	50 lbs/ac	Adapted to acid to calcareous loamy and clayey soils. Tolerates wet conditions. Cease grazing when seed pods form to avoid poisoning and allow reseeding.

*All legumes should be inoculated with the proper inoculum prior to planting.

**Seeding rates are for broadcast plantings and can be reduced by 1/3 for drilled plantings. All planting rates should be applied on a Pure Live Seed (PLS) basis

Participant signature: _____

Tract No.: _____

Date: _____

Field Office: _____

I certify that I understand the information detailed on this job sheet for the establishment and maintenance of the vegetative species listed below.

Parish: _____

Planner's name: _____

Seedbed preparation methods (document the field and the number of times the practice is to be conducted in each field)			Seeding method (Document the method used in each field)	
Method	Field	Times	Method	Field
Chisel/Subsoil			Broadcast	
Disk			Conventional Drill	
Plow			No-till drill	
Harrow			Wildland seed drill	
Herbicide (burndown) ¹			Planter	
Prescribed burn			Sprigger	

Field No.	Acres	Species ²	Planting rate (PLS, oz, lbs, bu)/ac	Planting depth (in.)	Planting Date	Amendments (units/acre) ³			
						Lime	Nitrogen	Phosphorus	Potassium

Additional information:

¹ Any pesticides used in the establishment of the vegetation described on this job sheet shall be applied according to label instructions and recommendations of the LSU Agricultural Center.

² All seed or planting material should be labeled and meet or exceed Louisiana seed quality source standards for germination, purity, and noxious weed limitations

³ Any nutrients applied shall be applied according to soil test analysis and recommendations and in accordance with a nutrient management plan.