United States Department of Agriculture
NRCS Natural Resources Conservation Service

Forage and Biomass Planting Guide

Alabama NRCS Guide Sheet No. AL512

Definition

Establishing or re-establishing stands of adapted species of grasses and legumes to provide high quality forage for livestock grazing or feed. Forage establishment also has benefits of controlling erosion, improving soil quality for crop rotations, and converting marginal cropland to alternative uses.

Planting Guidelines

Plant Selection
Select plants with growth characteristics that will provide the type of forage or feed needed and are suited for the soil and site conditions. Table 1 contains the plants most commonly used in Alabama and the soils and site conditions that they are best adapted.

Fertilizer and Lime
Fertilizer and lime should be incorporated at rates recommended by soil test results.

Seedbed Preparation and Planting Methods
Remove rocks, stumps, and other obstructions and smooth surface irregularities that prevent surface drainage and/or interfere with safe and efficient operation of equipment.

Conventional – Chisel or subsoil to break-up plowpans and other compaction layers. Thoroughly prepare soil to a depth of 6 inches, incorporating lime and fertilizer. Smooth and firm seedbed before planting.

Conservation (Mulch till) – Prepare the seedbed with a chisel, disk or other implement to leave 30 percent ground cover of existing residue after planting. Tillage or herbicide operations should begin early enough to assure a good kill of existing vegetation prior to planting. Mix fertilizer and lime into the soil during seedbed preparation.

Conservation (No-till) – Closely graze or mow existing vegetation. Use herbicides to kill existing vegetation and control weeds. Broadcast fertilizer and lime prior to planting.

Weed Management
Evaluate each field, site, or farm to determine necessary tillage or herbicide treatments needed to control weeds during establishment. If pesticides are used, evaluate risks to surface and ground water resources. All pesticides used during establishment of forage crops will be in accordance to the label recommendations. Mowing or selective herbicides should be used to minimize competition of emerging weeds to the planted species.

A combination of mechanical and chemical control may be needed to reduce the bank of “hard seeds” in the soil prior to planting. Planting an annual, interim, crop may allow the use of herbicides that will provide this benefit, but may delay the planting the forage crop. Understand plant-back restrictions before using any pesticides.

Management During Establishment
Restrict grazing and/or limit harvest until the area is well established to the desired species. 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 inches from the soil surface during the first growing season.

Table 1. WARM SEASON Forage Crops Commonly Grown for Pasture or Hay in Alabama.

Forage Crop	Seeding Rate (lb/A)	Seeding Depth (in.)	Planting Date			Remarks
			North	Central	South	
GRASSES - Perennial						
Bahiagrass	20	¼ - ½	Mar 1 – Jun 15 [1]	Mar 1 - Jul 15	Feb 1 - Nov 1	Adapted to sandy soils; tolerates drought and poor drainage.
Bermudagrass Seed (hulled)	5	¼ - ½	Apr 1 - Jul 15	Mar 15 - Jul 15	Mar 1 - Jul 15	Adapted to sandy soils; tolerates drought; responds to nitrogen; potassium is important for survival and production.
Bermudagrass – Sprigs [2]			Apr 1 - Jul 15	Mar 15 - Jul 15	Mar 1 - Aug 15	Adapted to sandy soils; tolerates drought; responds to nitrogen; potassium is important for survival and production.
Rows	30 bu.	3 – 6				
Broadcast	45 bu.	2 – 4				
Dallisgrass	10 lbs. PLS [3]	¼ - ½	Mar 15 - Jul 1	Mar 1 - Jul 1	Feb 1 - Jul 1	Best adapted to moist sites & Blackbelt soils.
Eastern Gamagrass [4]	8 lbs. PLS Drilled	1 – 1½	Apr 1 - Jul 1	Mar 15 - Jul 15	Mar 1 - Jul 15	Best adapted to moist bottoms & stream terraces. Do not continuously graze.
Switchgrass [4, 7]	5 lbs. PLS BC, 4 lbs. PLS Drilled	0 – ¼	Apr 1 – Jul 1	Mar 15 - Jul 15	Mar 1 – Jul 1	Adapted to soils with good moisture. Tolerates poorly drained soils. Do not continuously graze. May be grown for biomass.
Big Bluestem	12 lbs. PLS BC, 9 lbs. PLS Drilled	¼ - ½	April 1 – June 15	April 1 – June15	April 1 – June15	Do not continuously graze. Deep well-drained soils preferred.
Little Bluestem	8 lbs. PLS BC, 6 lbs PLS Drilled	¼ - ½	April 1 – June 15	April 1 – June15	April 1 – June15	Does not tolerate poorly drained soils. Do not continuously graze. Drought resistant.
Indiangrass	12 lbs. PLS BC, 9 lbs. PLS Drilled	¼ - ½	April 1 – June 15	April 1 – June15	April 1 – June15	Adapted to well drained, fertile clay soils. Heat and drought tolerant. Do not continuously graze.

Table 1. WARM SEASON Forage Crops Commonly Grown for Pasture or Hay in Alabama. (con't)						
Forage Crop	Seeding Rate (lb/A)	Seeding Depth (in.)	Planting Date			Remarks
			North	Central	South	
GRASSES - Annual						
Millet, Browntop, Proso, and Foxtail	Drilled 20 B-Cast 30	½ - ¾	May 1 – Aug 1	Apr 1 - Aug 15	Apr 1 - Aug 15	Well drained productive soils. Drought tolerant.
Millet, Pearl	Drilled 15 B-Cast 30	½ - 1½	Apr 20 - Jul 1	Apr 15 - Jul 1	Apr 1 - Jul 15	Adapted to clay and loam soils with good summer moisture. Avoid calcareous Blackbelt soils.
Sorghum-Sudan Hybrids	Drilled 25 B-Cast 35	½ - 1	May 1 – Aug 1	Apr 15 - Aug 1	Apr 1 - Aug 15	Well drained productive soils. Drought tolerant.
Sorghum, Sweet and Forage	Rows 5 B-Cast 20	1	Apr 20 - May 15	Apr 20 - May 15	Apr 20 - Jul 1	Well drained productive soils. Drought tolerant.
Sudangrass	Drilled 25 B-Cast 35	½ - 1	May 1 - Aug 1	May 1 - Aug 1	May 1 - Aug 1	Light sandy to heavy clay soils. Drought tolerant.

Table 1. <u>WARM SEASON</u> Forage Crops Commonly Grown for Pasture or Hay in Alabama. (con't)

Forage Crop	Seeding Rate (lb/A)	Seeding Depth (in.)	Planting Date			Remarks
			North	Central	South	
<u>LEGUMES - Perennial</u>						
Alfalfa	25	0- ¼	Aug 15 - Oct 1	Sep 1 - Oct 1	Oct 1 - Nov 1	Requires deep, fertile, well drained soils. pH 6.0-7.0
Birdsfoot Trefoil	Alone 10 Mixtures 5	0- ¼	Sep 1 - Oct 31	-	-	Requires well drained productive soils.
Lespedeza, Sericea	Drill 20 B-Cast 30	¼	Mar 15–May 15 Or Jun 15 - Jul 15	Mar 1 – May 1	Feb 15 – May 1	Drought tolerant; best on clay or loam soils; tolerant of soil acidity and low fertility; slow to establish.
Perennial Peanut	Rhizomes 80 Bu/ac Sprigs 120 Bu/ac	1	-	-	Jan – March	Adapted to well-drained sandy or sandy loam soils. Do not plant north of line that runs between Brundidge, Luverne, and Grove Hill. (31.72°N LAT)
<u>LEGUMES - Annual</u>						
Clover, Alyce	20	¼ - ½	-	-	May 15 - Jul 15	Fertile, well drained soils
Lespedeza, Annual	30	¼ - ½	Feb 15 - Apr 1	Feb 15 - Apr 1	-	Needs good drainage; tolerant of Drought; low fertility and soil acidity Avoid lime soils of Blackbelt.

Table 2. COOL SEASON Forage Crops Commonly Grown for Pasture or Hay in Alabama.

Forage Crop	SeedingRate (lb/A)	Seeding Depth (in.)	Planting Date			Remarks
			North	Central	South	
GRASSES - Perennial						
Orchardgrass	15	¼ -½	Aug 15 - Nov 1	--	--	Less tolerant of drought and poor drainage than tall fescue; Will not tolerate over grazing.
Tall Fescue [5/]	Drilled 20 B-Cast 25	¼ -½	Sep 1 - Nov 1	Sep 1 - Nov 1	Sep 15 - Nov 15 [6/]	Best adapted to fertile soils with good moisture holding capacity.
GRASSES - Annual						
Ryegrass	25	0 – ½	Aug 25 - Oct 1	Sep 1 – Oct 15	Sep 15 – Nov 1	Best adapted to clay loam soils
Small Grains **Oats** **Rye** **Wheat** **Barley** **Triticale**	90-120	1 – 2	Sep 1 – Nov 1	Sep 15 – Nov 1	Sep 15 - Nov 15	Rye is better adapted to well drained, sandy to loam soil and is more tolerant of soil acidity than wheat or oats; Oats are cold sensitive & subject to winter kill; Wheat more tolerant of heavy wet soils.

Table 2. Cool Season Forage Crops Commonly Grown for Pasture or Hay in Alabama. (con't)

Forage Crop	Seeding Rate (lb/A)	Seeding Depth (in.)	Planting Date			Remarks
			North	Central	South	
LEGUMES - Perennial						
Clover, White and Ladino	3	0 – ¼	Sep 1 - Oct 31 Or Feb 1 - Apr 1	Sep 1 - Oct 31 Or Feb 1 - Apr 1	Sep 15 - Nov 15	Requires well-drained soil with pH 6.5+; drought tolerant; supply potassium, phosphorus, sulfur and boron.
LEGUMES - Annual						
Caley Peas	50	½ - 1	Sep 1 - Oct 15	Sep 1 - Oct 15	Sep 1 - Oct 15	Adapted to alkaline and moderately acid Black belt soil. Seeds are toxic.
Clover, Arrowleaf	6	0 – ½	Aug 25 - Oct 1	Sep 1 – Oct 15	Sep 15 – Nov 1	Overseed 5 weeks later. Best on well drained soils. Avoid Black Belt soils.
Clover, Ball	4	0 – ¼	Sep 1 - Oct 31	Sep 1 - Oct 31	Sep 1 - Oct 31	Adapted to most soils. Reseeds well and tolerates wet soils and flooding.
Clover, Crimson	25	0 – ½	Aug 25 - Oct 1	Sep 1 – Oct 15	Sep 15 – Nov 1	Avoid high pH soils. Best on well drained soils. Overseed 5 weeks later.
Clover, Lappacea	10	0 – ¼	-	Sep 1 - Oct 31	-	Black Belt soils only
Clover, Red	Drilled 8 B-Cast 15	¼ - ½	Sep 15 - Nov 15 Or Feb 1 - Apr 1	Sep 15 - Nov 15 Or Feb 1 - Apr 1	Sep 15 - Nov 15	Fertile well drained soils

Table 2. Cool Season Forage Crops Commonly Grown for Pasture or Hay in Alabama. (con't)						
Forage Crop	**Seeding Rate (lb/A)**	**Seeding Depth (in.)**	**Planting Date**			**Remarks**
			North	**Central**	**South**	
Legumes - Annual (con't)						
Clover, Subterranean	10	¼ - ½	Aug 25 – Oct 1	Sep 1 - Oct 31	Sep 1 - Oct 31	Best on well-drained productive soils
Vetch, Common	35	1-2	-	Sep 1 - Oct 15	Sep 15 - Nov 1	Best on well-drained soils. Certain varieties may freeze if planted late. Nova II is cold tolerant.
Vetch, Harry	25	1-2	Sep 1 - Oct 15	Sep1 - Oct 15	Sep 15 - Nov 1	Best on Well-drained soils

1/ Bahiagrass plantings:

- Sand Mountain variety: N,C,S
- Pensacola, Tift9, Tifquick, UF Riata: S,C and North counties contiguous to Central Alabama plus St. Clair, Calhoun, and Cleburne.
- Argentine: S
- Fall plantings of bahiagrass should include 45 lbs./ac of small grain to provide cover during winter months.

2/ Use broadcast rates for machine planting in rows 24 inches or less.

3/ Drill – Drilled; B-Cast – Broadcast; and PLS = Pure Live Seed.

4/ May be included in a mixture of other native grasses, Indiangrass & big bluestem, on a trial bases. See AL NRCS conservation practice standard, Conservation Cover – Code 327 for seeding mixtures and rates.

5/ Only endophyte-free or novel endophyte varieties of tall fescue shall be planted for forage.

6/ Fescue seeding in south Alabama is limited to subclass w soils except in MLRA 135.

7/ May be planted for biomass production purposes.

NOTES:

A. Where legumes are seeded with grasses, use the seeding dates for the grasses.

B. Where two or more grasses are used in a mixture, reduce the seeding rate of each by about one-third. Do not reduce the seeding rates of legumes when used in the mixtures.

C. Seeding rates for a cost-share program shall be the rate specified by the program.