FORAGE SUITABILITY GROUP

Sandy Over Loam, Loamy and Clayey Soils on Ridges and Side Slopes of Hydric Uplands

FSG No.: G133AA443FL

Major Land Resource Area (MLRA 133A):

Southern Coastal Plain

Map Unit List

Alapaha loamy sand, 2 to 8 percent slopes

Adapted Species List

The native forage species listed are considered adapted to grow on the soils in this group at their natural pH levels. All introduced grass and legume species will need the pH level raised to min. 5.5 (unless noted) for best production. Irrigation is not recommended in these soils, and all forages listed are adapted to dryland conditions. Consult with state extension service for current cultivar or germplasm recommendations (http://agronomy.ifas.ufl.edu/foragesofflorida/).

Perennial Species:

Grasses

Warm season (Introduced)

- Bahiagrass (*Paspalum notatum*, pH 5.0 – 6.5)
- Bermudagrass (*Cynodon dactylon*)

Warm season (Native)

- Big Bluestem (*Andropogon gerardii*)
- Purple Bluestem (*Andropogon glomeratus* var. *glaucopsis*)
- Yellow Indiangrass (*Sorghastrum nutans*)
- Lopsided Indiangrass (*Sorghastrum secundum*)
- Switchgrass (*Panicum virgatum*)

Legumes

Warm season (Introduced)

- Rhizoma Perennial Peanut (*Arachis glabrata*, pH 5.8-7.0)

Annual Species:

Grasses

Warm season

- Browntop Millet (*Urochloa ramosa*; =*Panicum ramosum*)
- Pearl Millet (*Pennisetum glaucum*)
- Sorghum (*Sorghum bicolor*; includes forage sorghums, sudangrass, and their hybrids)

Cool season

- Ryegrass, annual (*Lolium perenne* ssp. *multiflorum*; =*L. multiflorum*)
- Oat (*Avena sativa*)
- Rye (*Secale cereale*)
- Wheat (*Triticum aestivum*)
- Triticale (x *Triticosecale*)

Legumes

Warm season

- Aeschynomene (*Aeschynomene americana*)
- Hairy Indigo (*Indigofera hirsuta*)

Cool season

- White Clover (*Trifolium repens*, pH 6.0-7.5)
- Berseem Clover (*Trifolium alexandrinum*, pH 6.5-8.0)
- Ball Clover (*Trifolium nigrescens*, pH >6.5)

Seasonal and Total Production Estimates

Production on in this FSG would be expected to be similar to FSG G133AA341FL most times of the year due to loam and/or clay in the subsoil. The water table will perch above the loamy layer and seepage slopes will be present on sites with slopes >2%. Due to erosion concerns, annual forages should only be used when no-till is an option on those sites with 8% slope.

For this FSG, use of cool season forages such as annual ryegrass, oats, and wheat planted in a prepared seedbed for use as a winter feed supply for the whole cow herd may be practical most years. In years of above average winter rainfall (El Niño winters), cool season annual grass forage growth may be limited on this FSG due to saturated soil conditions. Overseeding annual ryegrass also is an option.

Several clovers and other legumes are recommended for this FSG if planted in a prepared seedbed or by overseeding. Grazing management and fertilization need to favor the legume component for persistence, productivity, and seed production when natural reseeding of annuals is desired. Grazing management for seed production also is important for white clover, which is a weak a perennial in

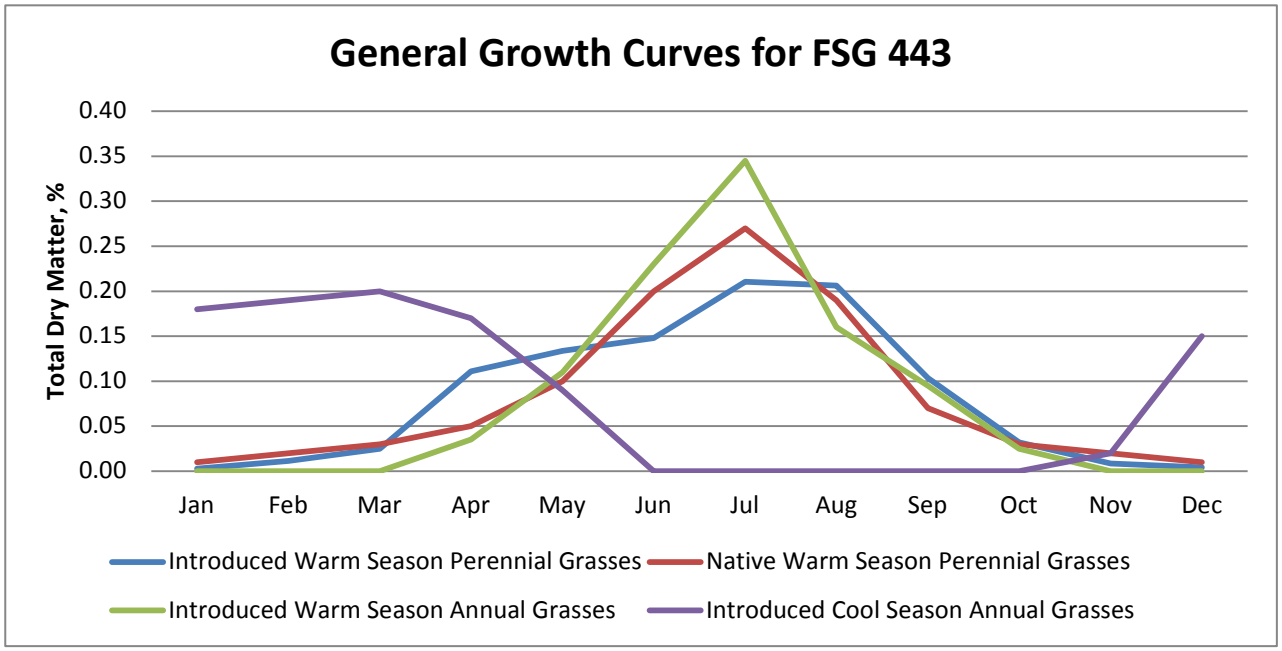
Florida and are heavily dependent upon reseeding to persist. Due to bloat issue, clovers should be used only in mixtures with cool season grasses, overseeded on bahiagrass pastures when grazed, or when bloat preventative supplements are fed.

Initial growth of perennial warm season grasses and legumes or establishment of warm season annual grasses may be delayed in the spring due to low rainfall. Often production of perennial species also dips during the April/May dry period. Once normal summer rainfall begins, plant production should resume. Warm season legumes such as aeschynomene can also be oversown onto warm season grasses in this forage suitability group, although fertilization (no N fertilizer) and grazing management needs to favor legume establishment and persistence. Additional lime may be needed to maintain a pH of 5.5 to 6.0.

Expected Range in Dry Matter Production and Animal Unit Months (AUM) for Different Forages†				
Forage	**Range in Dry Matter,**		**Range in AUM/acre‡**	
Bahiagrass (0 lb N/acre) [13,14]#	3,750	6,000	2.4	3.8
Bahiagrass (60 lb N/acre)[14]	8,750	10,000	5.6	6.4
White clover/bahiagrass[13]	7,500	8,000	4.8	5.1
Bermudagrass, (200 lb N/acre)[11]	12,500	14,000	8.0	9.0
Big Bluestem (100-300 lb N/acre)[5,6,7]	900	1,800	0.6	1.2
Pearl Millet (225 to 300 lb N/acre)[1,8]	7,500	12,000	4.8	7.7
Sorghum X Sudangrass (225 to 300 lb N/acre)[1,8]	12,500	24,000	8.0	15.4
Ryegrass (120 lb N/A)[3,4]	3,500	7,200	2.2	4.6
Small Grain Forage (oat, wheat, etc.; 120 lb N/acre)[2]	6,000	7,200	3.8	4.6
Rhizoma Perennial Peanut[12]	10,000	14,000	6.4	9.0
Aeschynomene[10]	2,500	3,000	1.6	1.9
Hairy Indigo[9]	2,500	3,000	1.6	1.9
Cool-Season Clovers, overseeded on bahiagrass[4,6,7]	300	1,080	0.2	0.7
Cool-Season Clovers, prepared seedbed[4,6]	1,300	3,600	0.8	2.3

†Production data based on 25% increase in lower range values for FSG G133AA141FL for introduced warm season species and production similar to FSG G133AA231 for warm season natives and cool season species.
‡Animal Unit Month based on 50% grazing efficiency and 2.6% intake per day.
#Superscript numbers refer to references.

Production Curves:



Dry Matter Production Distribution by Month												
Forage	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Introduced Warm Season Perennial Grasses												
Bahiagrass (Pensacola)		0.01	0.03	0.14	0.14	0.17	0.19	0.17	0.14	0.03		
Bahiagrass (Argentine)		0.01	0.04	0.08	0.09	0.18	0.25	0.22	0.11	0.02		
Bermudagrass (Tifton 85)		0.02	0.02	0.13	0.15	0.13	0.21	0.22	0.08	0.03	0.01	0.00
Native Warm Season Perennial Grasses												
Native Warm Season Grasses (Generic)	0.01	0.02	0.03	0.05	0.1	0.2	0.27	0.19	0.07	0.03	0.02	0.01
Switchgrass	0.01	0.02	0.03	0.07	0.15	0.19	0.2	0.19	0.09	0.03	0.01	0.01
Legumes or Legume/Grass Combinations												
Rhizoma Perennial Peanut			0.05	0.15	0.14	0.15	0.20	0.18	0.14			
White clover/Argentine Bahiagrass	0.01	0.02	0.07	0.14	0.17	0.21	0.18	0.12	0.09	0.02		
Cool Season Annual Grasses												
Annual Ryegrass	0.18	0.18	0.2	0.18	0.1						0.02	0.14
Small Grains (Wheat, Rye, etc.)	0.18	0.2	0.2	0.16	0.08						0.02	0.16
Warm Season Annual Grasses												
Sorghum-Sudangrass					0.07	0.2	0.3	0.25	0.15	0.03		
Millet (Pearl and Browntop)				0.07	0.15	0.26	0.39	0.07	0.04	0.02		

Physiographic Features

Dominantly very deep, gently sloping to sloping, poorly drained soils formed in sandy over loamy, loamy, or clayey marine deposits. These soils are on summits, shoulders and back slopes of marine terraces. Diagnostic subsurface horizon is an argillic horizon above 40 inches. The organic matter content of the surface layer is dominantly low or medium. Unless limed, the reaction in the surface layer ranges from extremely acid to moderately acid.

Climatic Features

Freeze-free period (>28° F 9 years in 10 at least): averages 255 d (range 243-273 d)

Length of growing season (>32° F 9 years in 10 at least): averages 224 d (range 205-247 d)

Annual minimum temperature (° F in month of January): averages 38.2 (range 36.7-39.7)

USDA Plant Hardiness Zone: 8b (15-20° F, Tallahassee)

Mean annual precipitation (inches): averages 62.14 (range 53.18-69.48)

Group Soil Properties (Statewide)

Percent Slope: Dominantly 2 to 12 percent

Surface Texture: Dominantly loamy sand, sand, or their gravelly analogs. A few members are fine sand, coarse sand, fine sandy loam, or loamy fine sand.

Sand Content of Surface Layer: 70 to 97 percent

Clay Content of Surface Layer: 1 to 15 percent

Organic Matter Content of Surface Layer: 0.5 to 10 percent

Cation Exchange Capacity of Surface Layer (meq/100g): Not available

Effective Cation Exchange Capacity of Surface Layer (meq/100g): 1.1 to 5.5

Bulk Density of Surface Layer (g/cc): 1.3 to 1.53

Saturated Hydraulic Conductivity of Surface Layer: Rapid

Soil Reaction of Surface Layer: 3.5 to 6.0 (unless limed)

Available Water Capacity (0 to 30 inches): 0.3 to 2.4 inch per inch

Depth to Finer Textured Material: Less than 40 inches to more than 80 inches

Depth to Bedrock: Greater than 80 inches

Drainage Class (Agronomic): Poorly

Depth to Seasonal High Water Table (during wet periods): 0 to 1 feet

Flooding: None

Ponding: None

Monthly precipitation (inches) and temperature (F):

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precip avg	4.80	6.37	3.78	4.45	6.36	7.04	6.32	5.24	3.31	4.16	4.09	4.80
Avg Min	38.2	40.8	46.9	99.8	60.8	67.8	70.7	70.3	66.4	54.6	46.5	41.3
Avg Temp	51.6	54.9	61.2	67.0	74.4	80.2	82.1	81.8	78.7	69.9	61.5	54.4
Avg Max	62.2	66.1	72.5	78.7	85.3	90.1	91.5	91.0	88.0	80.3	71.9	64.5

Climate Station Locations (averages from 1971 to 2000; see Appendix 1)

FSG Documentation

Inventory Data References:

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State Correlation: Pending

Forage Suitability Group Approval:

Rosalind Moore, Acting State Resource Conservationist

Tom Weber, State Soil Scientist

FL NRCS
August 2013

Appendix 1: Climate Station Locations		
COOP ID (FL=08)	**Location**	**County**
1544	Chipley	Washington
1986	Crestview	Okaloosa
2220	De Funiak Springs	Walton
3230	Fountain	Bay
5275	Madison	Madison
5793	Milton Exp. Stn.	Santa Rosa
5879	Monticello	Jefferson
6240	Niceville	Okaloosa
7429	Quincy	Gadsden
8758	Tallahassee Mun. Air.	Leon