

## FORAGE SUITABILITY GROUP

### Sandy Soils on Rises, Knolls, and Ridges of Mesic Uplands

**FSG No.: G133AA121FL**

**Major Land Resource Area (MLRA 133AA):**

Southern Coastal Plain

**Map Unit List**

- Alaga loamy sand, moderately wet, 0 to 5 percent slopes
- Blanton coarse sand, 0 to 5 percent slopes
- Blanton coarse sand, 5 to 8 percent slopes
- Blanton fine sand, 0 to 5 percent slopes
- Blanton sand, 0 to 5 percent slopes
- Blanton sand, 5 to 8 percent slopes
- Bonifay fine sand, 0 to 5 percent slopes
- Bonifay loamy sand, 0 to 5 percent slopes
- Bonifay loamy sand, 5 to 8 percent slopes
- Bonifay sand, 0 to 5 percent slopes
- Bonifay sand, 1 to 8 percent slopes
- Bonifay sand, 5 to 8 percent slopes
- Foxworth sand, 0 to 5 percent slopes
- Foxworth sand, 5 to 8 percent slopes
- Ortega fine sand, 0 to 5 percent slopes
- Ortega sand, 0 to 5 percent slopes
- Resota sand, 0 to 5 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. 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)
  - Chalky Bluestem (*Andropogon virginicus* var. *glaucus*)
  - Big Bluestem (*Andropogon gerardii*)
  - Splitbeard Bluestem (*Andropogon ternarius*)

- Yellow Indiangrass (*Sorghastrum nutans*)
- Switchgrass (*Panicum virgatum*)

Legumes

Warm season (Introduced)

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

**Annual Species:**

Grasses

Warm season (Introduced)

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

Cool season (Introduced)

- Rye (*Secale cereale*)

Legumes

Warm season (Introduced)

- Alyceclover (*Alysicarpus vaginalis*)
- Cowpea (*Vigna unguiculata*)
- Hairy Indigo (*Indigofera hirsuta*)

**Seasonal and Total Production Estimates**

Seasonal and total forage production is somewhat higher than FSG G133AA111FL because soils in this FSG have slightly better water holding capacity and seasonal water table is higher (3 to 5 feet). These factors will decrease drought effects, but total annual production still is driven largely by rainfall. Yields can increase by > 1,000 lbs/acre in years with above average rainfall. However greatly reduced production and even stand loss associated with over grazing can occur in years with below average rainfall. Irrigation is not recommended for these soils due to poor water holding capacity. Establishment of both annual and perennial warm season forages maybe delayed due to limited rainfall in the spring and short term drought periods in the summer months. Total production of all forage species is expected to be higher than FSG G133AA111FL but less than other groups, with a general growth curve still weighted more towards the later part of the growing season.

Rye is the only cool season forage recommended for this FSG. Productivity of other cool season annuals will be very low without irrigation due to poor water holding capacity of the soils in this FSG.

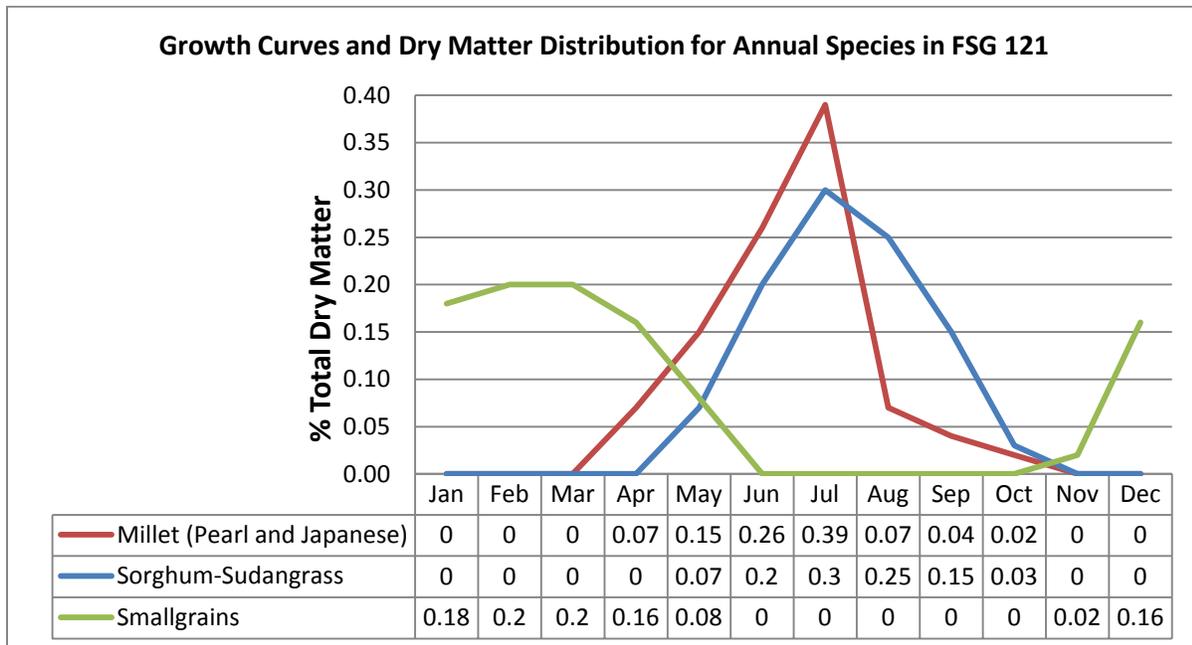
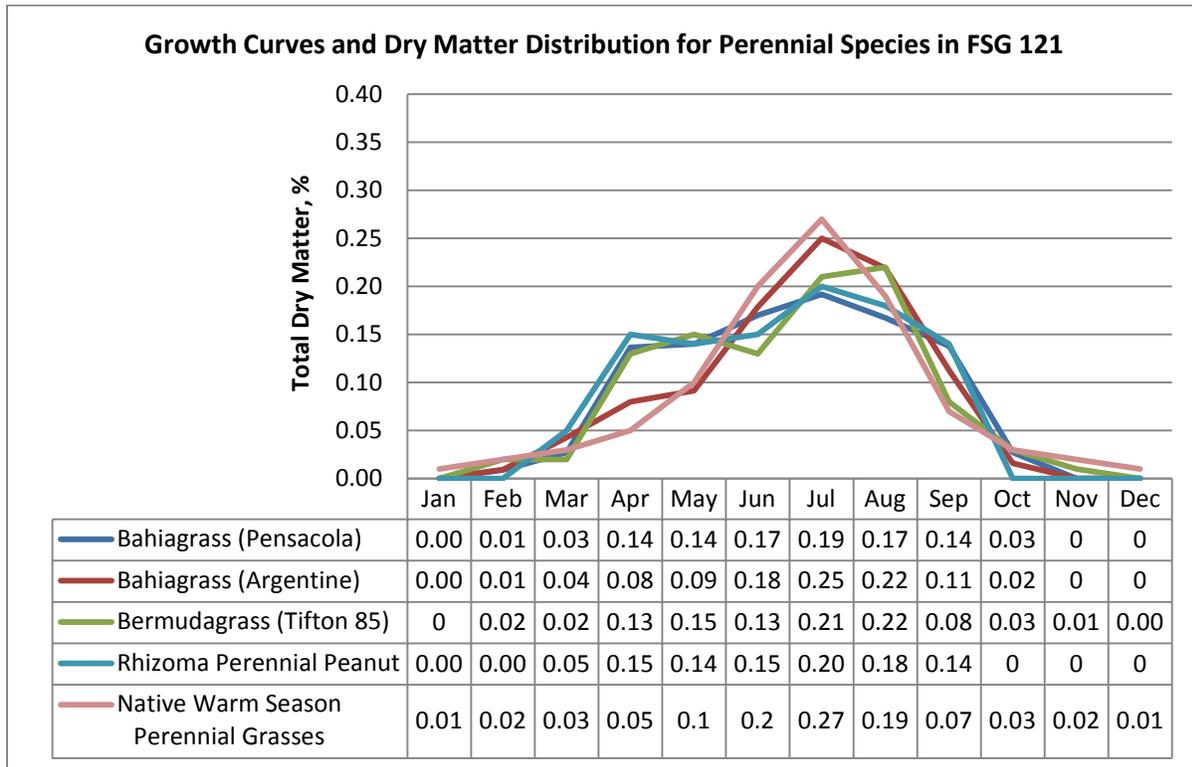
Expected Range in Dry Matter Production and Animal Unit Months (AUM) for Different Forages <sup>†</sup>				
Forage	Range in Dry Matter Yield, lb/acre		Range in AUM/acre‡	
	Bahiagrass (0 lb N/acre) <sup>6‡</sup>	3,100	4,400	2.0
Bahiagrass (60 lb N/acre) <sup>6,10</sup>	5,000	7,500	3.2	4.8
Bermudagrass (400 lb N/acre) <sup>5</sup>	17,500	25,000	11.2	16.0
Switchgrass, Alamo <sup>1</sup>	7,500	10,000	4.8	6.4
Rhizoma Perennial Peanut, Florigraze <sup>4,8</sup>	8,750	12,500	5.6	8.0
Pearl Millet (limited irrigation, ≈400 lb N/acre) <sup>7</sup>	10,000	20,000	6.4	12.8
Rye (120 lb N/acre) <sup>3#</sup>	3,950	5,300	2.5	3.4
Alyceclover <sup>9</sup>	3,750	6,250	2.4	4.0
Hairy Indigo <sup>2</sup>	7,500	15,000	4.8	9.6

<sup>†</sup>Production data based on a 25% increase from FSG G133AA111FL for all except rye which had only 10% increase.

<sup>‡</sup>Animal Unit Month based on 50% grazing efficiency and 2.6% intake per day.

<sup>#</sup>Superscript numbers refer to references.

**Production Curves:**



## Physiographic Features

Dominantly very deep, nearly level to gently sloping, well drained or moderately well drained soils formed in sandy marine deposits. These soils are on summits, shoulders, and back slopes of marine terraces. They have 40 inches to greater than 80 inches of fine sand or sand. Diagnostic subsurface horizon is an argillic horizon below 40 inches or is absent. The organic matter content of the surface layer is dominantly very low or low. Unless limed, the reaction in the surface layer ranges from extremely acid to slightly 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 0 to 8 percent, but ranges to 10 percent

**Surface Texture:** Fine sand, sand, coarse sand, loamy sand, very fine sand

**Sand Content of Surface Layer:** 84 to 99 percent

**Clay Content of Surface Layer:** 0.1 to 8 percent

**Organic Matter Content of Surface Layer:** 0.5 to 3 percent

**Cation Exchange Capacity of Surface Layer (meq/100g):**  
 0.1 to 5.3

**Effective Cation Capacity of Surface Layer (meq/100g):**  
 0.1 to 5.8

**Bulk Density of Surface Layer (g/cc):** 1.3 to 1.6

**Saturated Hydraulic Conductivity of Surface Layer:** Rapid or very rapid

**Soil Reaction of Surface Layer:** 3.5 to 6.5 (unless limed)

**Available Water Capacity (0 to 30 inches):** 0.3 to 1.9 inch per inch

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

**Depth to Bedrock:** Greater than 80 inches. A few members have bedrock at 60 to 80 inches.

**Drainage Class (Agronomic):** Moderately well, well

**Depth to Seasonal High Water Table (during wet periods):** 3.0 to 5.0 feet below the surface

**Flooding:** None

**Ponding:** None

## Monthly precipitation (inches) and temperature (F):

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Precip avg</b>	4.80	6.37	3.78	4.45	6.36	7.04	6.32	5.24	3.31	4.16	4.09	4.80
<b>Avg Min</b>	38.2	40.8	46.9	99.8	60.8	67.8	70.7	70.3	66.4	54.6	46.5	41.3
<b>Avg Temp</b>	51.6	54.9	61.2	67.0	74.4	80.2	82.1	81.8	78.7	69.9	61.5	54.4
<b>Avg Max</b>	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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5. Coleman, S., and M. Williams. 2007. Bermudagrass yield and quality through the grazing season. In Proc. USDA-ARS STARS Field Day, May 25, 2007. Brooksville, FL.
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9. Williams, M.J., C.G. Chambliss, and J.D. Brolmann. 1993. Potential of 'Savanna' Stylo as a Stockpiled Forage for the Subtropical USA. J. Prod. Agric. 6:553-556.
10. Williams, M.J., and R.S. Kalmbacher. 1996. Renovation Effects on Bahiagrass Productivity. Agron. J. 88:191-198. (<https://www.agronomy.org/publications/aj/abstracts/88/2/AJ0880020191>, accessed August 22, 2011).

State Correlation: Pending

### Forage Suitability Group Approval:



Rosalind Moore, Acting State Resource Conservationist



Tom Weber, State Soil Scientist

<b>Appendix 1: Climate Station Locations</b>		
<b>COOP ID (FL=08)</b>	<b>Location</b>	<b>County</b>
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