FORAGE SUITABILITY GROUP

Sandy Soils on Strongly Sloping to Steep Side Slopes of Mesic Uplands

FSG No.: G154XB123FL

Major Land Resource Area (MLRA 154): South-Central Florida Ridge

Map Unit List

Sparr sand, 5 to 12 percent slopes
Wicksburg sand, 5 to 12 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)

- Chalky Bluestem (*Andropogon virginicus* var. *glaucus*)
- Big Bluestem (*Andropogon gerardii*, northern half of the MLRA)
- 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:

Annual species are not recommended due to erosion hazard associated with steep slope.

Seasonal and Total Production Estimates

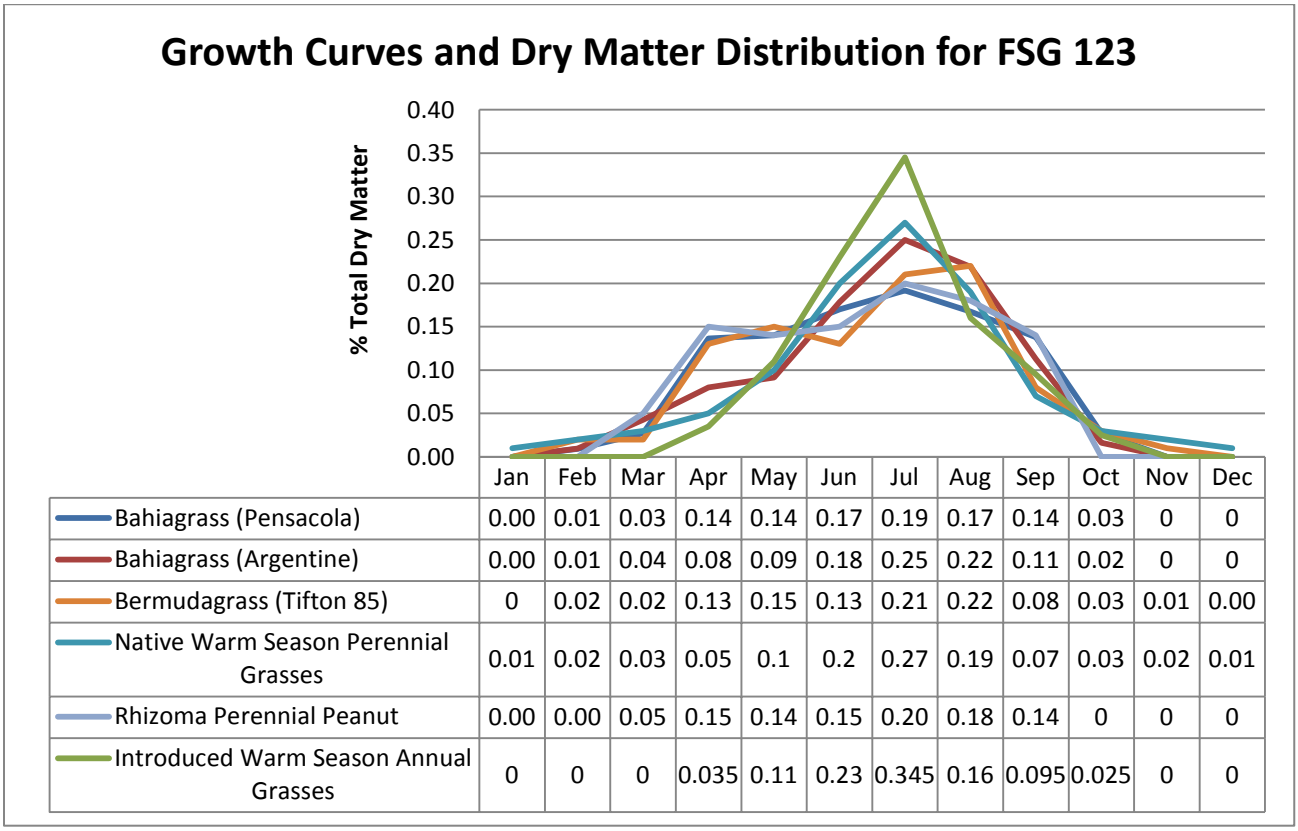
Forage production should be similar to FSG G154XB121FL because the surface texture and seasonal high water table are similar, but strong slopes (predominantly 8-30 percent) will reduce rainfall infiltration and increase surface runoff compared to FSG G154XB121FL. Thus forage yields should more consistently be at the lower end of the range listed. As with FSG G154XB121FL, total annual production is driven largely by rainfall and 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, steep slopes, decreased water infiltration, and increased soil erosion potential. 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. In general, the growth curve for all warm season species still weighted more towards the later part of the growing season. Due to erosion concerns, warm season annual forages should only be used when no-till or overseeding existing sod is an option.

Cool season forage production is very limited due to decreased and sporadic rainfall during winter months (November-March), therefore no cool season forages are recommended and no production data is given.

Expected Range in Dry Matter Production and Animal Unit Months (AUM) for Different Forages†				
Forage	**Range in Dry Matter Yield, lb/acre**		**Range in AUM/acre‡**	
Bahiagrass (0 lb N/acre)[5]#	2,350	3,200	1.5	2.0
Bahiagrass (60 lb N/acre)[5,9]	3,750	4,700	2.4	3.0
Bermudagrass (400 lb N/acre)[4]	13,125	18,750	8.3	11.9
Switchgrass, Alamo[1]	7,000	7,500	4.4	4.7
Rhizoma Perennial Peanut, Florigraze[3,7]	6,500	9,400	4.1	5.9
Pearl Millet (limited irrigation,≈400 lb N/acre) [6]	7,500	15,000	4.7	9.5
Alyceclover[8]	1,875	2,800	1.2	1.8
Hairy Indigo[2]	1,400	2,350	0.9	1.5

† Production data based on a 25% decrease from FSG G154XB121FL.
‡Animal Unit Month based on 50% grazing efficiency and 2.6% intake per day.
#Superscript numbers refer to references.

Production Curves:



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bahiagrass (Pensacola)	0.00	0.01	0.03	0.14	0.14	0.17	0.19	0.17	0.14	0.03	0	0
Bahiagrass (Argentine)	0.00	0.01	0.04	0.08	0.09	0.18	0.25	0.22	0.11	0.02	0	0
Bermudagrass (Tifton 85)	0	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	0.01	0.02	0.03	0.05	0.1	0.2	0.27	0.19	0.07	0.03	0.02	0.01
Rhizoma Perennial Peanut	0.00	0.00	0.05	0.15	0.14	0.15	0.20	0.18	0.14	0	0	0
Introduced Warm Season Annual Grasses	0	0	0	0.035	0.11	0.23	0.345	0.16	0.095	0.025	0	0

Physiographic Features

Dominantly very deep, strongly sloping to very steep, well drained or moderately well drained soils formed in sandy marine deposits. These soils are on 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 316 d (range 278-365 d)

Length of growing season (>32° F 9 years in 10 at least): averages 285 d (range 243-365 d)

Annual minimum temperature (°F in month of January): average 50.2 (range 45.2-59.2)

USDA Plant Hardiness Zone:
9a (20-25° F, Ocala)
9b (25-30° F, Orlando)

Mean annual precipitation (inches): averages 51.09 (range 47.70-67.03

Soil Properties

Percent Slope: Dominantly 8 to 30 percent, but ranges to 60 percent

Surface Texture: Fine sand, sand, loamy fine sand, loamy sand

Sand Content of Surface Layer: 84 to 97 percent

Clay Content of Surface Layer: 1 to 11 percent

Organic Matter Content of Surface Layer: 0.5 to 4 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 1.61

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 1.5 inch per inch

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

Depth to Bedrock: Greater than 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
Precip avg	3.04	2.89	3.69	2.40	3.52	6.86	7.17	7.36	6.22	2.79	2.38	2.47
Avg Min	48.1	49.6	54.4	58.5	65.0	70.7	72.3	72.5	71.0	61.0	56.6	51.0
Avg Temp	60.0	61.5	66.4	68.6	76.6	80.8	81.8	81.8	80.4	74.2	67.5	61.5
Avg Max	70.8	72.9	77.9	82.4	87.7	90.6	91.7	91.4	89.5	84.0	77.9	72.2

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

FSG Documentation

Inventory Data References:

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8. Williams, M.J., C.G. Chambliss, and J.D. Brolmann. 1993. Potential of 'Savanna' stylo as a stockpiled forage for the subtropical USA. Journal of Production Agric. 6:553-556.
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State Correlation: (NA)

Forage Suitability Group Approval:

Greg Hendricks, State Resource Conservationist

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FL NRCS
December 2012

Appendix 1: Climate Station Locations		
COOP ID (FL=08)	**Location**	**County**
945	Bradenton	Manatee
6414	Ocala	Marion
6628	Orlando Intl. Air.	Orange
7851	St. Leo	Pasco
7886	St. Petersburg	Pinellas
8824	Tarpon Springs	Pinellas
478	Bartow	Polk
4707	Lake Alfred Exp Stn	Polk
4797	Lakeland	Polk
5973	Mountain Lake	Polk
9707	Winter Haven	Polk
1978	Crescent City	Putnam
2915	Federal Point	Putnam
6753	Palatka	Putnam
7982	Sanford Orlando	Seminole
1163	Bushnell	Sumter
2229	Deland	Volusia