FORAGE SUITABILITY GROUP

Loamy and Clayey Soils on Stream Terraces, Flood Plains or in Depressions

FSG No.: G154XB345FL

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

Soil Series List

Due to the large list of map units in this group, please refer to Appendix 1.

- Bluff
- Chobee
- Eaton
- Emeralda
- Eurika
- Fellowship
- Iberia
- Manatee
- Martel
- Nittaw
- Oleno
- Paisley
- Winder

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 grasses will need native pH raised to min. 5.5 (unless noted) for best production. Consult with state extension service for current cultivar or germplasm recommendations (http://agronomy.ifas.ufl.edu/foragesofflorida/).

Perennial Species:

Grasses

Warm season (Introduced)

- Limpograss (*Hemarthria altissima*)

Warm season (Native)

- Maidencane (*Panicum hemitomon*)
- Blue Maidencane (*Amphicarpum muhlenbergianum*)

Annual Species:

Grasses

Warm season

- Japanese Millet (*Echinochloa esculenta*)

Legumes

Warm season

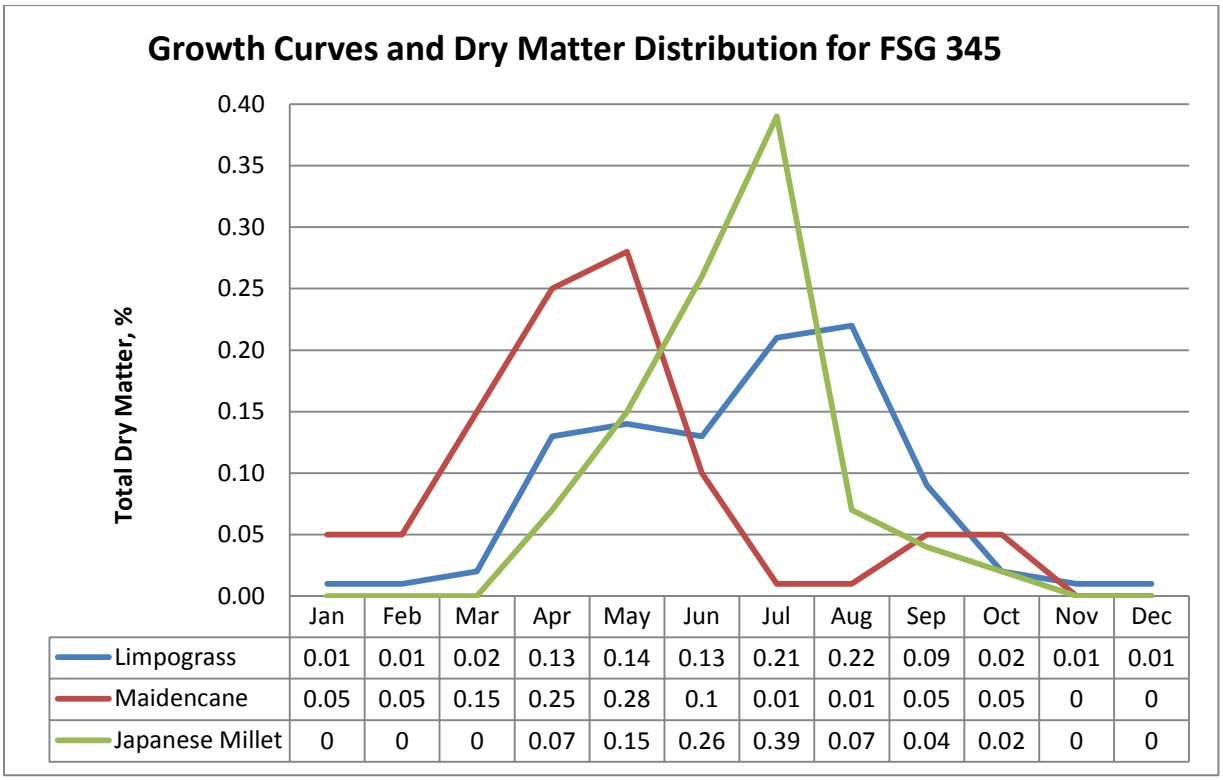
- Aeschynomene (*Aeschynomene americana*)

Seasonal and Total Production Estimates

Unless previously drained, soils in this FSG have very few forage species adapted to their seasonal high water table (1 to 2 feet above the soil surface). If previously drained see forage list and discussion with FSG G154X341FL.

Expected Range in Dry Matter Production and Animal Unit Months (AUM) for Different Forages				
Forage	Range in Dry Matter, lbs/acre		Range in AUM/acre†	
Limpograss (≈400 lb N/acre)[3,5]	8,000	13,000	5.1	8.2
Maidencane[1]#	5,000	6,700	3.2	4.3
Blue Maidencane[1]#	2,100	2,500	1.3	1.6
Japanese Millet[2]	4,000	6,000	2.5	3.8
Aeschynomene[4]	2,000	3,000	1.3	1.9

†Animal Unit Month based on 50% grazing efficiency and 2.6% intake per day.
‡Superscript numbers refer to references.
#Dry matter estimated based on the assumption air dried yield in reference had ≈16% moisture.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limpograss	0.01	0.01	0.02	0.13	0.14	0.13	0.21	0.22	0.09	0.02	0.01	0.01
Maidencane	0.05	0.05	0.15	0.25	0.28	0.1	0.01	0.01	0.05	0.05	0	0
Japanese Millet	0	0	0	0.07	0.15	0.26	0.39	0.07	0.04	0.02	0	0

Physiographic Features

Dominantly very deep, nearly level, poorly drained or very poorly drained soils formed in loamy and clayey marine deposits or alluvial deposits. These soils are on flood plains, or in depressions of marine terraces. Diagnostic subsurface horizon is an argillic horizon above 20 inches. A few members have either a mollic or umbric horizon. The organic matter content of the surface layer is dominantly medium or high. Unless limed, the reaction in the surface layer ranges from extremely acid to neutral.

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: 0 to 2 percent

Surface Texture: Dominantly sandy loam, fine sandy loam, loam, clay, fine sand, loamy sand, loamy fine sand, and their mucky analogs. A few members are sand, very fine sandy loam, silt loam, sandy clay loam, clay loam, silty clay loam, and sandy clay.

Sand Content of Surface Layer: 26 to 95 percent

Clay Content of Surface Layer: 5 to 74 percent

Organic Matter Content of Surface Layer: 1 to 20 percent

Cation Exchange Capacity of Surface Layer (meq/100g): 1.3 to 54.4

Effective Cation Exchange Capacity of Surface Layer (meq/100g): 2.4 to 72.1

Bulk Density of Surface Layer (g/cc): 1.3 to 1.68

Saturated Hydraulic Conductivity of Surface Layer: Moderate to very rapid

Soil Reaction of Surface Layer: 3.5 to 7.3

Available Water Capacity (0 to 30 inches): 0.2 to 6.0 inch per inch

Depth to Finer Textured Material: Less than 20 inches

Depth to Bedrock: Greater than 80 inches. Some members have bedrock at less than 80 inches.

Drainage Class (Agronomic): Very poorly, poorly

Depth to Seasonal High Water Table (during wet periods): 1.0 to 2.0 feet above the surface

Flooding: If flooded, frequent or occasional with brief to very long duration

Ponding: If ponded, Long or very long duration

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 2)

FSG Documentation

Inventory Data References:

1. --------. 1987. Range management for important native grasses of Florida. Gainesville, FL, USA: US Department of Agriculture, Natural Resources Conservation Service. 168 p.
2. Barnhart, S. 2008. Forage and cover crop considerations for delayed planting and flooded sites. Ames, IA, USA: Iowa State University Extension. Available at: http://www.extension.iastate.edu/CropNews/2008/0611SteveBarnhart.htm. Accessed 18 December 2012.
3. Kalmbacher, R.S., P.H. Everett, F.G. Martin, K.H. Quesenberry, E.M. Hodges, O.C. Ruelke, and S.C. Schank. 1987. Yield and persistence of perennial grasses at Immokalee, Florida: 1981 to 1984. Gainesville, FL, USA: University of Florida, Institute of Food and Agricultural Sciences, Agriculture Experiment Station. Bull. 865. Available at: http://ufdc.ufl.edu/UF00027614/00001?search=kalmbacher. Accessed 17 December 2012.
4. Mislevy, P., R.S. Kalmbacher, and F.G. Martin. 1981. Cutting management of the tropical legume American jointvetch. Agronomy Journal 73:771-775 Available at: https://www.agronomy.org/publications/aj/abstracts/73/5/AJ0730050771. Accessed 17 December 2012.

Newman Y.C., A. Agyin-Birikorang, M.B. Adjei, J.M. Silveira, J.M.B. Vendramini, J.E. Rechcigl, and L.E. Sollenberger. 2009. Nitrogen fertilization effect on phosphorus remediation potential of three perennial warm-season forages. Agronomy Journal 101:1243-1248. Available at: https://www.soils.org/publications/aj/pdfs/101/5/1243. Accessed 19 December 2012.

State Correlation: (NA)

Forage Suitability Group Approval:

Greg Hendricks, State Resource Conservationist

Tom Weber, State Soil Conservationist

Appendix 1: Map Unit List

Bluff sandy clay, frequently flooded	Iberia clay
Chobee fine sandy loam, depressional	Manatee fine sand, depressional
Chobee fine sandy loam, frequently flooded	Martel sandy clay loam
Chobee soils, frequently flooded	Nittaw mucky fine sand, depressional
Eaton mucky fine sand, depressional	Oleno clay, occasionally flooded
Emeralda fine sand (FL607)†	Paisley fine sand, depressional
Eureka loamy fine sand, depressional	Winder fine sand, depressional
Fellowship fine sandy loam, depressional	

†NOTE: Some members do not identify flooding or depressional in the map unit name but are subject to flooding or ponding. In these cases, please refer to the water features data on the Web Soil Survey or Soil Data Mart. Information in parenthesis refers to county or soil survey code where map unit occurs.

Appendix 2: 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