The Grass Is Always Greener: Forage Varieties and Selection

Dr. Ann Blount, Forage Breeding and Genetics
NFREC-Marianna and Quincy
Considerations for Variety Selection

1. North vs. South
2. Perennial vs. Annual
3. Soil Type
4. Class of Livestock
5. Your Management Style
6. Pest Considerations
1. North vs. South – Climate

*Subtropical versus temperate species*

Temperature

Rainfall (or irrigation)

Photoperiod

Vernalization
Examples

Bahiagrass-photoperiod response
- UF-Riata
- Argentine
- Pensacola
- Tifton 9

Red Clover-photoperiod response

Triticale-freeze tolerance and vernalization
2. Perennial vs. Annual Forages

Perennial

Bahiagrass
Bermudagrass
Stargrass
Limpograss
Perennial Peanut
Fescue (????)

(Short Term)
Alfalfa
White clover
Carpon desmodium
Stylosanthes
Annual

Pearl Millet
Sorghum
Sorghum-Sudangrass
Crabgrass

Wheat
Oat
Rye
Triticale
Rye grass
Clover
Vetch
Medic
Winter pea
Lupine
Aeschynomene
The Florida Forage System

- Jan: sorghum, switchgrass, gamagrass
- Feb: bahiagrass, bermudagrass, limpograss, stargrass
- Mar: perennial peanut, soybean, aeschynomone, stylo carpon, pearl millet, brown top millet and crabgrass
- Apr: brassicas, rye, wheat, triticale
- May: ryegrass, pea, clover
- Jun: oat
- Jul: vetch
3. Soil Type
4. Class of Livestock
5. Your Management

Forage systems that fit your level of operation and management style
6. Pest Considerations

Insects
Diseases
Nematodes

Not Human Pests!

BYDV on Oat

Crown Rust on Oat

Gray leafspot on ryegrass

Take-all on Bahiagrass and Bermudagrass

Bermudagrass
Stem Maggot
Bahiagrass

Argentine, Pensacola, Tifton 9, TifQuik, UF-Riata and Sand Mountain
<table>
<thead>
<tr>
<th>Bahiagrass</th>
<th>Yield Tons/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pensacola</td>
<td>3.7</td>
</tr>
<tr>
<td>Argentine</td>
<td>3.2</td>
</tr>
<tr>
<td>Tifton 9</td>
<td>4.3</td>
</tr>
<tr>
<td>TifQuik</td>
<td>4.5</td>
</tr>
<tr>
<td>UF-Riata</td>
<td>4.7</td>
</tr>
</tbody>
</table>

Bahiagrass total season yield at the NFREC-Marianna
### Bahiagrass cool-season yield at the NFREC-Marianna

<table>
<thead>
<tr>
<th>Bahiagrass entry</th>
<th>Cool season yield lbs/A</th>
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<tbody>
<tr>
<td>Tifton 9</td>
<td>885</td>
</tr>
<tr>
<td>Pensacola</td>
<td>724</td>
</tr>
<tr>
<td>Argentine</td>
<td>504</td>
</tr>
<tr>
<td>Sand Mountain</td>
<td>945</td>
</tr>
<tr>
<td>UF-Riata</td>
<td>1404</td>
</tr>
</tbody>
</table>

Pensacola - $2.25-2.50/lb  
Argentine - $3.20-2.80/lb  
Tifton 9 - $4-5/lb certified  
TifQuik - $5.00/lb certified  
UF-Riata - $5.00/lb certified

Seeding rate: 25 lbs/A
Bahiagrass

Origin of Pensacola bahiagrass
Corrientes AR
Bermudagrass
Patricio Munoz, new forage breeder

Coastal- oldest, 15 million acres
Coastcross I- hybrid between Coastal and a highly digestible bermudagrass from Kenya. 12% more digestible than Coastal lacks winterhardiness
Tifton 85- 26% higher yielding than Coastal and 11% more digestible
Tifton 44- Coastal X German bermudagrass
Russell- similar appearance to Coastal, fast spreader
Alicia- easy to establish, lower quality, less digestible, rust susceptible, likes wet sites
Jiggs- quick to establish, likes wet sites, rust susceptible
Bermudagrass Stem Maggot
Limpograss  New hybrids of Big Alta X Floralta
<table>
<thead>
<tr>
<th>Limpograss entry</th>
<th>Year</th>
<th>Tons/A</th>
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<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2013</td>
</tr>
<tr>
<td>1</td>
<td>4.0</td>
<td>4.8</td>
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<tr>
<td>4F</td>
<td>5.2</td>
<td>5.7</td>
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<tr>
<td>10</td>
<td>5.7</td>
<td>5.1</td>
</tr>
<tr>
<td>32</td>
<td>4.1</td>
<td>3.5</td>
</tr>
<tr>
<td>34</td>
<td>4.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Floralta</td>
<td>4.8</td>
<td>3.6</td>
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</tbody>
</table>
Native Florida Grasses

NRCS: wiregrass, gamagrass, *Paspalums*

Experimental line “Florida Gama”
Perennial Peanut

Season total yield of perennial peanut, NFREC-Marianna

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>5-year Average</th>
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<tbody>
<tr>
<td>Ecoturf</td>
<td>3.7 Ton/A</td>
</tr>
<tr>
<td>UF-Tito</td>
<td>5.3 Ton/A</td>
</tr>
<tr>
<td>UF-Peace</td>
<td>5.0 Ton/A</td>
</tr>
<tr>
<td>Florigraze</td>
<td>4.7 Ton/A</td>
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<tr>
<td>Arbrook</td>
<td>6.1 Ton/A</td>
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Perennial Peanut
Experimental perennial peanut lines

Perennial peanut establishment into pastures
Bahia/Per Peanut Pasture Establishment Trial

2 year old Argentine Bahia without Perennial Peanut

Untreated PP/bahia

Impose 8 oz + Roundup 8 oz/acre

Impose 8 oz/acre

Impose 4 oz + Roundup 8 oz/acre

Impose 4 oz/acre

Prowl 2 qts + Roundup 8 oz/acre

Roundup 8 oz/acre

Prowl 2 qts/acre

Cherokee Ranch Trial

Argentine Bahia
Planted Spring 2009

Florigraze
Perennial Peanut planted 3/15/11 on 8.5 acres

Pre-emerge herbicide treatments sprayed 3/21/11

Suggested May 2011 Treatments for grass suppression
Select 4 oz/a
Select 8 oz/a
Impose 4 oz/a
Small Grains: Oats, Rye, Triticale and Ryegrass
Variety selection and date of planting

The difference cultivar selection makes

The difference one month makes
FL0567 Oat

New crown rust resistant, early maturing winter oat for forage, silage and grain
FL01143 Awnless Triticale
for silage, grazing, and grain
Annual Ryegrass

<table>
<thead>
<tr>
<th>March</th>
<th>May</th>
</tr>
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<tbody>
<tr>
<td>Yield (Mg ha(^{-1}))</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Early 4x</td>
<td>a</td>
</tr>
<tr>
<td>Jumbo</td>
<td>ab</td>
</tr>
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<td>Marshall</td>
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<table>
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<tr>
<th>March</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Forage P Removal (Kg ha(^{-1}))</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
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<tr>
<td>Early 4x</td>
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2014 Regional Trials

Ryegrass
FL-MarOna Early 4X
FL-MarOna Mid 4X

Cereal Rye
FL404 4X
FL405 Early 2X
FL406 Full Season 2X
Cool Season Legumes
(new forage breeder)
Alfalfa
Bulldog 805, Bulldog 505
recent RR alfalfas
new Alfalfa breeding program
White Clover

Ocoee, Osceola, Barblanca, Durana
Experimental “4-leaf” type
Red Clover

Southern Belle and Red Ace (non-dormant)
Barduro and Bulldog Red (mid dormant)
Kenland and Redland II

Experimental “2,4 D Resistant” Line
Ball, Berseem, Hop, Rose and Balansa clovers and Vetch, Winter Pea and Medic
Ball Clover in Jackson County
Crimson Clover
Dixie
AU-Sunrise (reselected)
AU-Robin
Think of the possibilities!
A Walk On The Wild Side
forages for wildlife
Dairy On-Farm Field Days
Milking R Dairy - Okeechobee County
Shenanadoah Dairy - Suwannee County
UF-Dairy Research Unit - Alachua County
Wildlife Food Plot Field Days
HAY...HAY...HAY! Perennial peanut field day
June 7, 2014
Outcome and Impacts

Over 80% of southeastern publicly-developed varieties have been developed or co-developed by the UF-Forage Breeding Program.
Forage Variety Testing

http://agronomy.ifas.ufl.edu/ForagesofFlorida
http://www.georgiaforages.com/
http://www.caes.uga.edu/commodities/swvt/

Above all, be FLEXIBLE!
Questions?