

# 2008 Hay Production School

## Recommendations in selecting and establishing a hay crop

### Recommendations in selecting and establishing a hay crop

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Extension Forage Specialist  
UGA – Dept. of Crop and Soil Sciences



### Overview

- Selecting the best species and variety for your needs or the needs of your market
  - Species/variety selection
- Establishment techniques
  - Sprigging hybrid bermudagrass
  - Planting alfalfa
  - Planting cool-season species



### Selecting the Right Species



### Selecting the Right Species



### Selecting the appropriate species.

1. Acceptable to the market
  - A. Supreme quality demands?
    - i. Good-fair quality hay
      - > bermudagrass, tall fescue\*, orchardgrass\*
    - ii. Premium quality hay
      - > bermudagrass, orchardgrass\*, annual ryegrass, alfalfa, perennial peanut\*\*
    - iii. Supreme quality hay
      - > Tifton 85 bermudagrass, annual ryegrass, alfalfa, perennial peanut\*\*
  - B. Other concerns:
    - i. Palatability
    - ii. Health concerns (real or perceived)



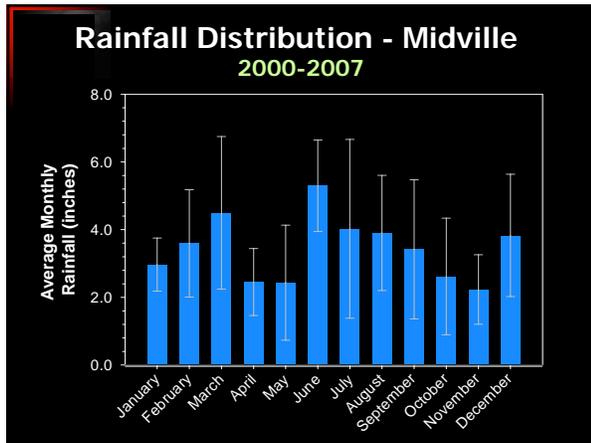
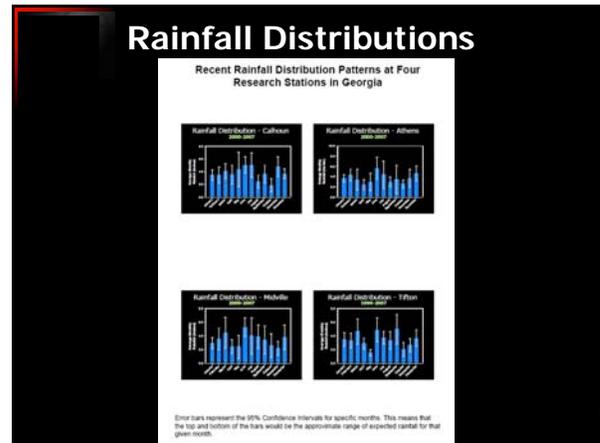
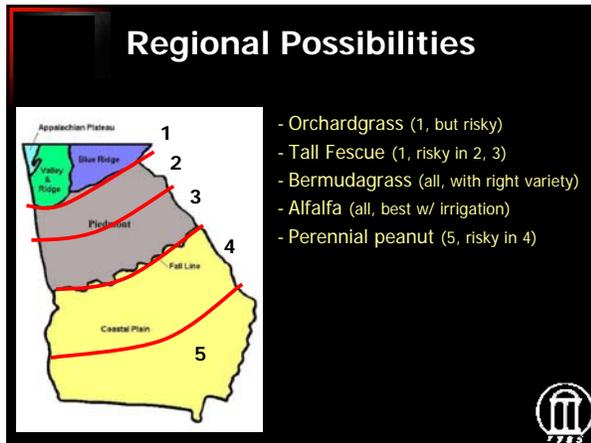
### Selecting the appropriate species.

2. Agronomically acceptable
  - A. Tolerant of climatic conditions

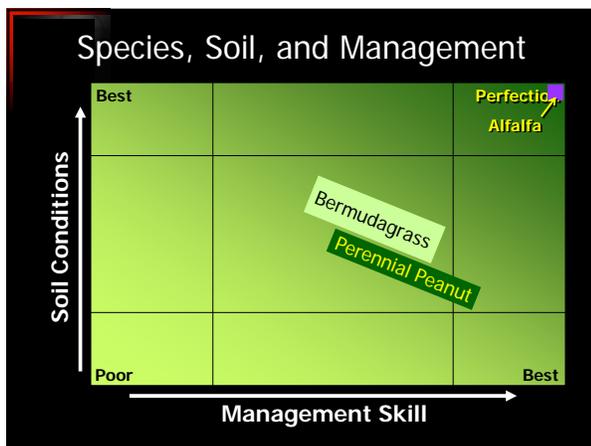


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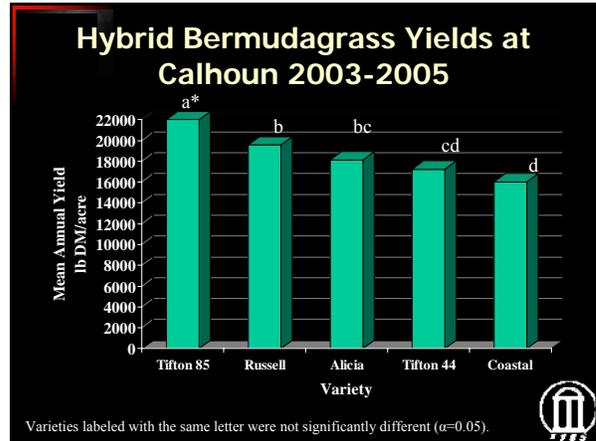
- ### Selecting the appropriate species.
2. Agronomically acceptable
    - A. Tolerant of climatic conditions
      - i. tall fescue (not in S. Piedmont, Coastal Plain)
      - ii. perennial peanut (not in Upper Coastal Plain or N)
    - B. High yields
    - C. Performance under irrigation
    - D. Vigorous establishment
    - E. Soil fertility demands
      - i. Especially high in alfalfa and bermudagrass
    - F. Appropriate to your management



- ### Selecting the appropriate variety.
- Choosing the right variety is a critical decision.
- Yields
    - Total Yields (multi-year)
  - Quality
  - Winter Hardiness
  - Persistence
    - Yields in 3<sup>rd</sup> or 4<sup>th</sup> year
    - Stand ratings
  - Disease resistance
-

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### Selecting the appropriate species.

Variety	Overall Rating	Yield*	Digestibility <sup>†</sup>	Winter Hardiness	Persistence	Leaf Spot Resistance
Alicia (Alecia)	★★★	100	P	G	P	P
Coastal	★★★★	100	F	G	G	E
Coastcross II	★★★★	135	E	G	ND	ND
Russell	★★★★	130	G	E	E	G
Tifton 44	★★★★	90	G	E	G	E
Tifton 78	★★★	120	E	F	F	E
Tifton 85	★★★★	135	E	F	E	E

### Palatability of Bermudagrasses

Highly acceptable:  
Coastal = Tifton 44 = Tifton 78 (= Russell)

Acceptable if given no other choice:

- Tifton 85
- Coastcross

### Drying Rate of Bermudagrasses

**Fastest Drying**  
Tifton 44 >= Coastal >= Russell  
(any differences driven by mass)

**Delayed by 1/2 to 1 full day (thicker stems)**  
Tifton 78 >= Coastcross I or II >= Tifton 85

### Selecting the Right Alfalfa Variety

- Dormancy rating of 5 to 8.
  - Rating (1-10) based on growth after September 1.
  - Winter survival in the North.
- Disease resistance:  $\geq$  MR to
  - phytophthora root rot (PRR), anthracnose (An), bacterial wilt (Bw), and fusarium wilt (Fw), as well as a R rating to aphanomyces root rot (APH).
- Varieties: Bulldog 505 or 805

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### Selecting the Right Perennial Peanut Variety

- Disease resistance:
  - Peanut Stunt Virus – all are susceptible.
- Varieties: Florigraze > Arbrook
  - Florigraze is more cold-hardy and responsive to irrigation.
  - Arbrook is slightly faster to establish, but is slower to spread laterally.
  - Stem size: Arbrook > Florigraze



### Establishment



### Thou Shalt Soil Test



**The #1 cause of poor stands at establishment – poor soil fertility or low soil pH.**



### Prepared Seedbed

- “Well-prepared” seedbed
  - Plow/disc/finish at least 2-4 wks prior to sprigging
  - Incorporate lime, phosphorus, and potassium.
  - Incorporate PPI herbicide.
  - Allow time to settle or firm with cultipacker/roller.
- Seedbed should be firm
  - Boot tracks should be ~1/4 in. deep
  - If too fluffy, the soil will dry very quickly (sandy soils)



### Minimum Till (“No-till”)

- Acceptable for vegetative establishment (sprigging), at least in Piedmont.
- PPI weed control?



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### "No-till"

- Best when terrain is rolling or soil is at risk of erosion.
- Primarily used for seeding or interseeding
- Not feasible for vegetative establishment (sprigging).



### Establishing Hybrid Bermudagrass

#### Best methods

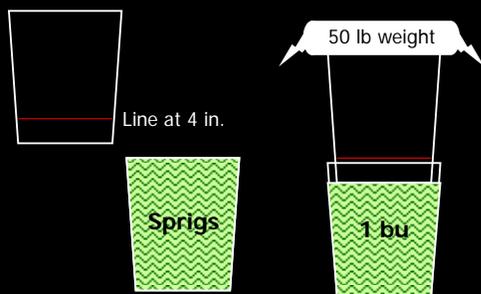
- 1) Dormant sprigs (rhizomes) - 40-50 bu/A
  - Dec. to early Mar.
- 2) Sprigs with green tops – 30-50 bu/A
  - spring (after last freeze) to early Aug.
- 3) Tops/green stems – 50-60 bu/A
  - Jun. – Aug.
  - Not recommended for Tifton 44

- Best if seedbed is well-prepared



### How Much is a Bushel of Sprigs?

Using Two 5-gallon Buckets



### Planting Alfalfa

#### Best methods: Coastal Plain

- 1) Well-prepared, very firm seedbed
  - Pack-plant-pack method
    - Broadcast or Drilled
    - Cultipacking seeder (Brillion)
- 2) (Distant) No-till into suppressed sod
  - Acceptable if interseeding into bermudagrass sod

Timing: mid-October – early December



### Planting Alfalfa

#### Best methods: Piedmont

- 1) Well-prepared, very firm seedbed
  - Pack-plant-pack method
    - Cultipacking seeder (Brillion)
    - Broadcast
    - (Distant 3<sup>rd</sup>) Drilled
- 2) No-till into suppressed sod

Timing: mid-September to late-October



### Seed Placement



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### Drilling Depth



- Watch cutting coulters depth in wet ground
- Coulters should cut about twice depth of seed's size
- Seeding too deep is major cause of establishment failures!



### Seedling Emergence: Hypocotyl Arch



### Seeding Rates

Species	Seeding Rate
	--- lbs PLS/A ---
Alfalfa	18 – 25
Red clover	12 – 15
White clover	2 – 3



- Pure Stands
  - Optimum conditions
  - Poor conditions
- Mixtures

### Seed Quality Concerns

- Alfalfa seed crop is currently relatively poor quality
  - Poor germination
  - Purity is low
- Pure Live Seed (PLS)
  - Germ x Purity
  - Maybe < 80% PLS



### Thou Shalt Use Certified Seed



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**Inoculate with appropriate strain:**  
 Alfalfa group (*Rhizobium meliloti*)  
 Clover Group (*Rhizobium trifolii*)

### Establishing Perennial Peanut

Best method

- 1) Dormant sprigs (rhizomes)
  - January to early March

- Seedbed should be well-prepared well in advance.

- Sprigging rate

- If purchased, 80 bu/acre
- If own or cheap, 100 – 120 bu/acre



### Resources on CD: Bermudagrass

#### Bermudagrasses in Georgia



#### Selecting a Forage Bermudagrass Variety

*Dennis W. Hancock, Norman R. Edwards, T. Wade Groves, and Denise M. Robinson*  
 University of Georgia Cooperative Extension

HOW MANY LIVE BERMUDAGRASS SPRIGS IN A BUSHEL?

Glenn M. Burton

As a buyer of a bushel of bermudagrass sprigs, I would like an answer to that question. As a sprigger who plants sprigs on a custom basis, I need that answer. I



### Resources on CD: Alfalfa

Alfalfa Production and Use in Georgia

Dennis W. Hancock, Forage Extension Specialist  
 Department of Crop and Soil Sciences  
 University of Georgia, Athens, GA



### Resources on CD: Perennial Peanut

#### Florida Rhizome Producers, Digging and Planting Businesses

Name	Location	Telephone
<a href="#">Cotton, Florida</a>	Lawtonville	(850) 234-3827
<a href="#">Eaton, Ohio</a>	Shaker Ridge	(419) 762-0118
<a href="#">Hess, Ohio</a>	Private	(419) 826-2926
<a href="#">Lambert, Ohio</a>	Wesleyville	(614) 224-4488
<a href="#">Lambert, Ohio</a>	Shenandoah	(614) 826-2222
<a href="#">Lambert, Ohio - 7846 St.</a>	Lawtonville	(419) 842-2222
<a href="#">Lambert, Richard and Lundy</a>	Shenandoah	(614) 712-2222
<a href="#">Lambert, Florida</a>	Lawtonville	(850) 738-8444
<a href="#">Lambert, Richard and Lundy, Pleasant Plains, Ohio</a>	Lawtonville	(419) 842-2222
<a href="#">Lambert, Ohio</a>	Lawtonville	(419) 842-2222
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88-AGR-33

#### Perennial Peanut: An Alternative Forage of Growing Importance<sup>1</sup>



88-AGR-33

#### Perennial Peanut Establishment Guide<sup>1</sup>



### QUESTIONS?

[www.georgiaforages.com](http://www.georgiaforages.com)

