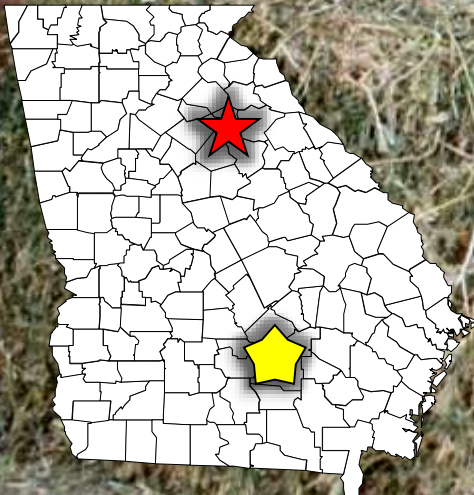


Alfalfa in the Deep South



Dr. Dennis Hancock

Professor and
Extension Forage Specialist
Crop and Soil Sciences – UGA

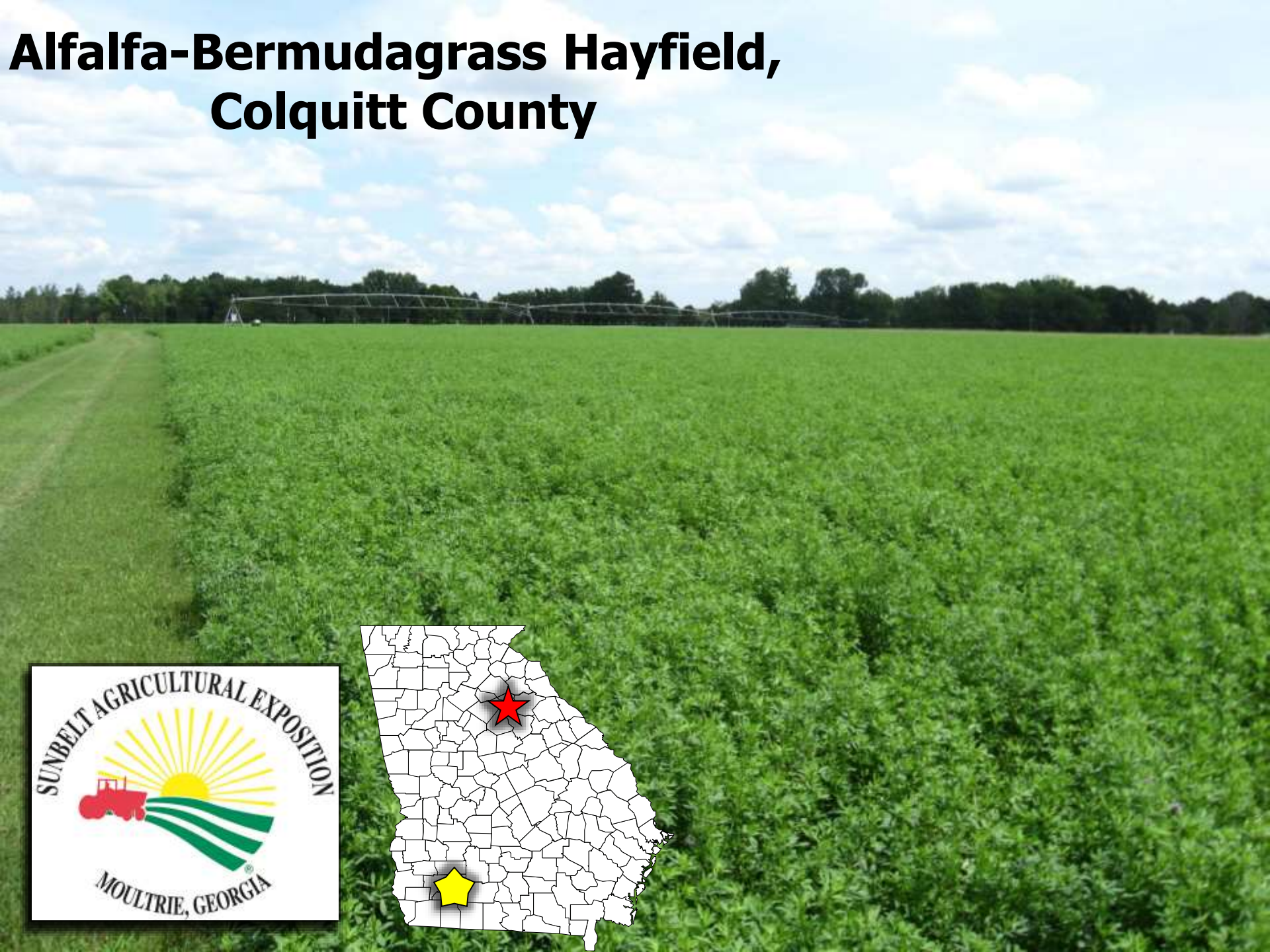


**Vickers Still Farms,
Coffee Co.**

**Alfalfa-Bermudagrass
Hayfield,
Echols Co.**

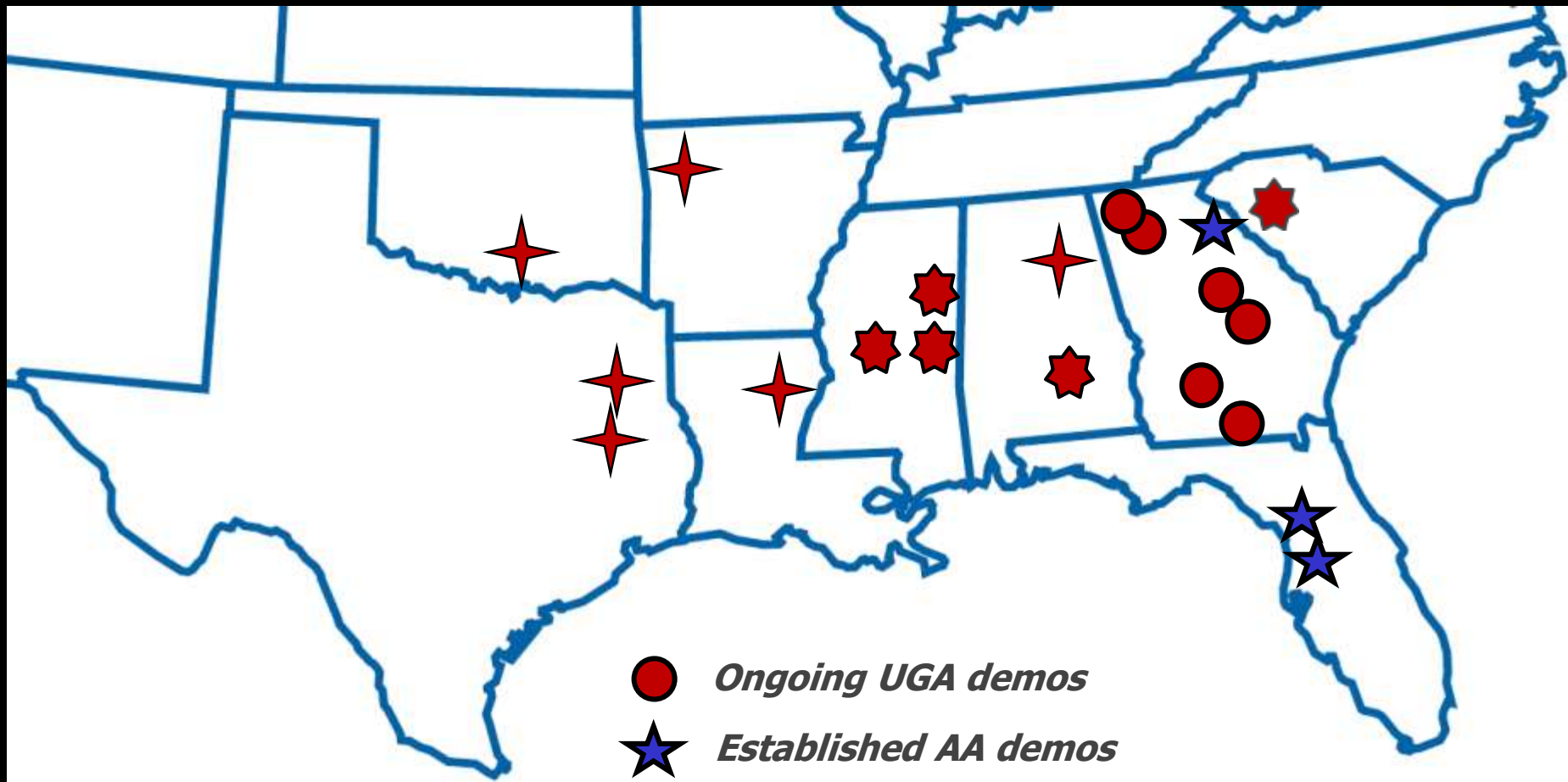






Alfalfa-Bermudagrass Hayfield, Colquitt County



Southeast US Demo Sites

Anchoring to the Existing GA Program



-  *Ongoing UGA demos*
-  *Established AA demos*
-  *Commitments to establish AA demos*
-  *Potential targets to establish AA demos*



SO WHY NOT ALFALFA?

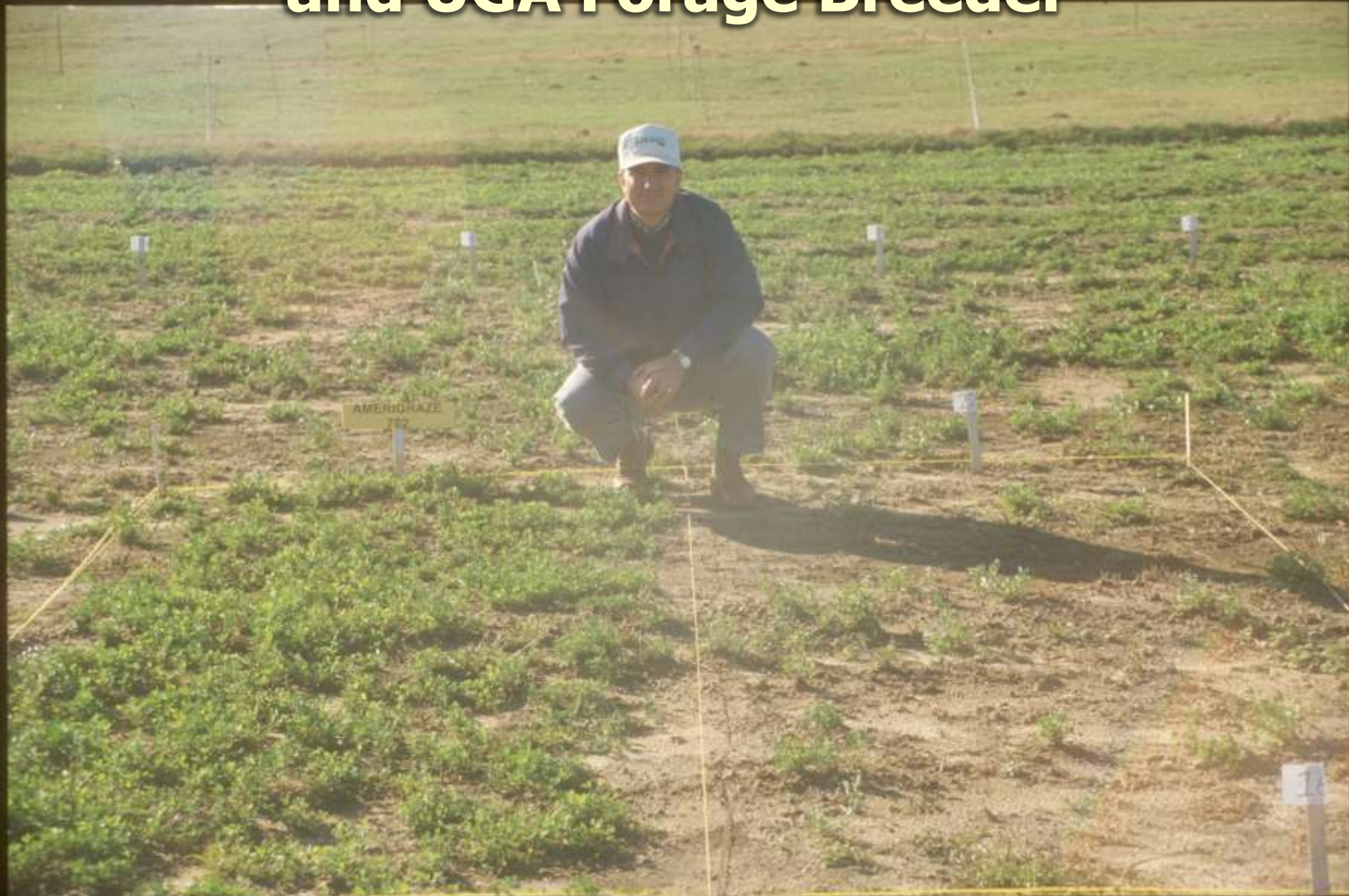
Blister Beetle Drying Conditions

Diseases It's Too NEEDY Lack of Marketing Skill

Not Enough Labor Pest Control

Poor Soil Fertility Too Risky

Dr. Joe Bouton, Emeritus Professor and UGA Forage Breeder

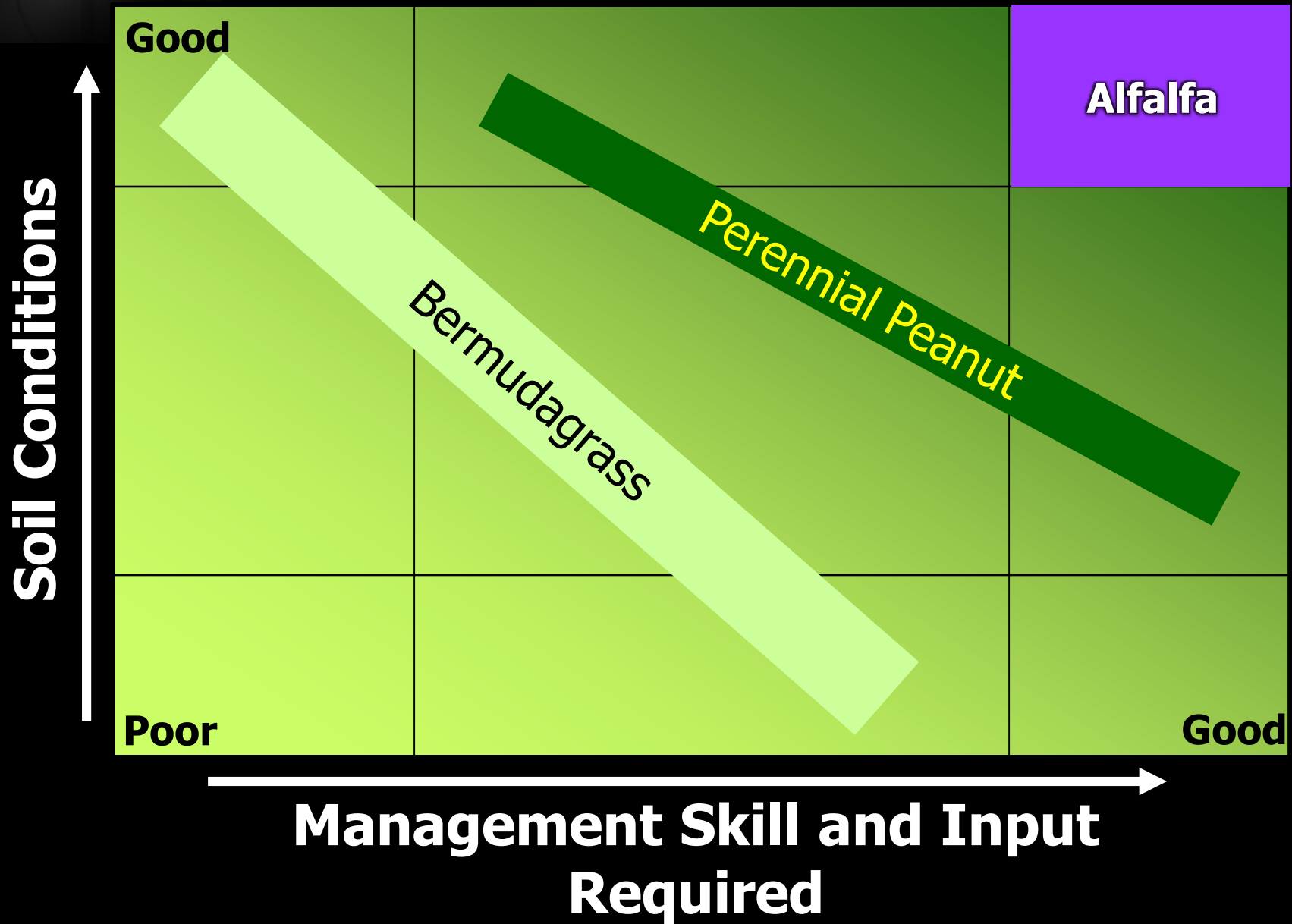


A wide-angle photograph of a vast alfalfa field. The plants are a vibrant green and appear to be in full growth. In the far distance, a line of trees and some farm buildings are visible under a clear, bright sky. The text 'ALFALFA' is overlaid on the top left of the image in a large, white, bold font with a black outline and a white underline.

ALFALFA

WILL GROW IN THE SOUTH!

Species, Soil, and Management

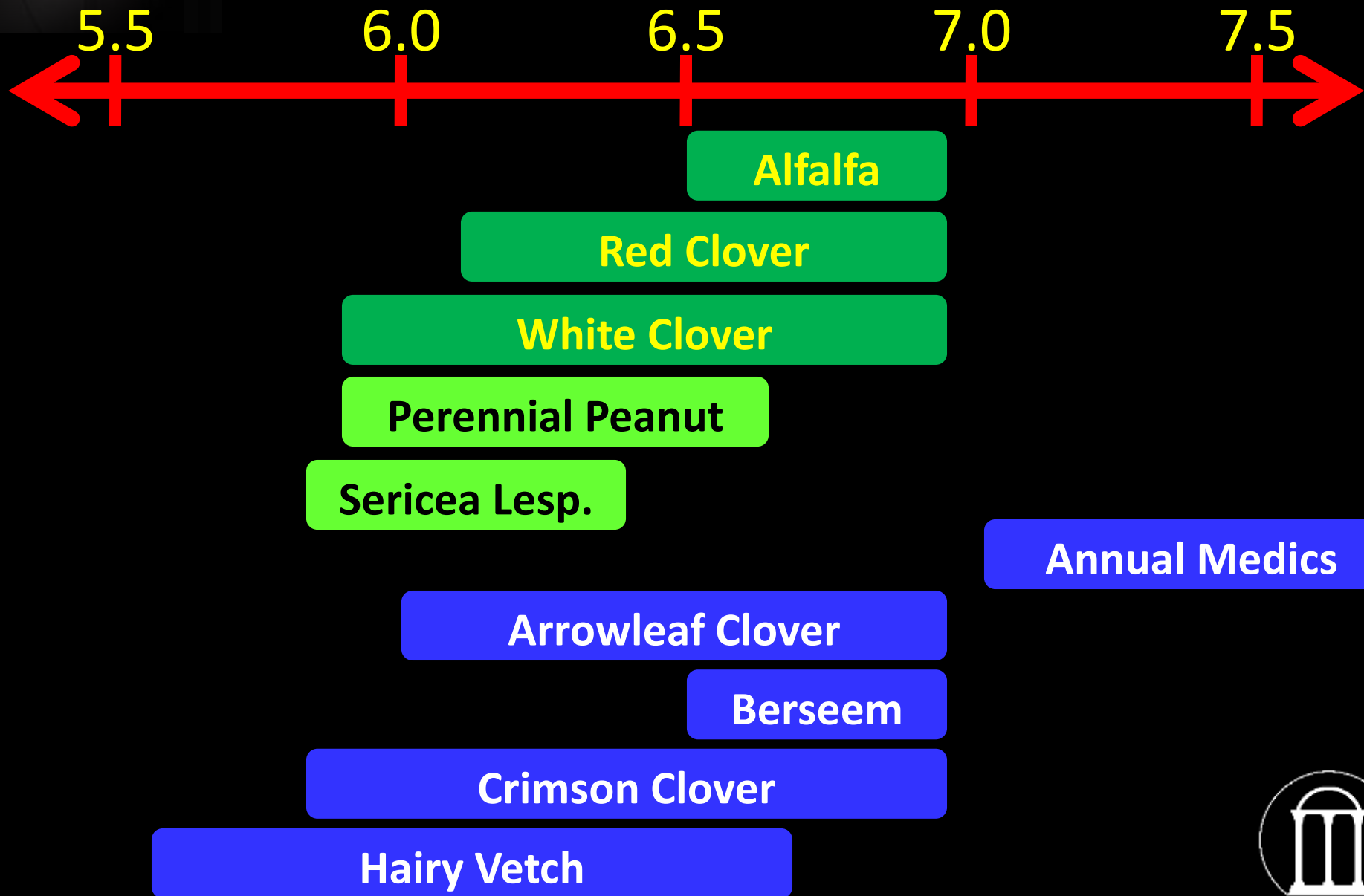




Poorly Drained Soil is a Major Challenge for Alfalfa

Picture credit: www.pioneer.com

Legumes and Their Optimum Soil pH



Why Interseed Alfalfa into Bermudagrass?

1. Grow your own nitrogen
2. Increase the quality of your forage (+ 30 or more RFQ points)
3. Makes excellent supplemental feed and/or cash hay crop
4. Growing with bermudagrass allows alfalfa to dry faster and be harvested clean
5. If all else fails, you still have bermudagrass.



Forage Yield of Bermudagrass Fertilized w/ N, Interseeded w/Alfalfa, vs. Alfalfa Alone

	1980	1981	1982	1983	Avg. Yield
	<i>(tons DM/acre)</i>				
Bermudagrass, 100 lbs N/acre	1.34	1.92	3.66	2.54	2.36
Bermudagrass, 300 lbs N/acre	2.54	3.66	6.69	5.18	4.52
Alfalfa + Bermudagrass	2.86	4.02	4.64	3.52	3.76
Alfalfa Alone	1.87	3.61	4.51	3.30	3.32
	Rainfall, inches <i>(30-yr avg = 12.05 in.)</i>				
	7.17	8.82	8.94	5.51	

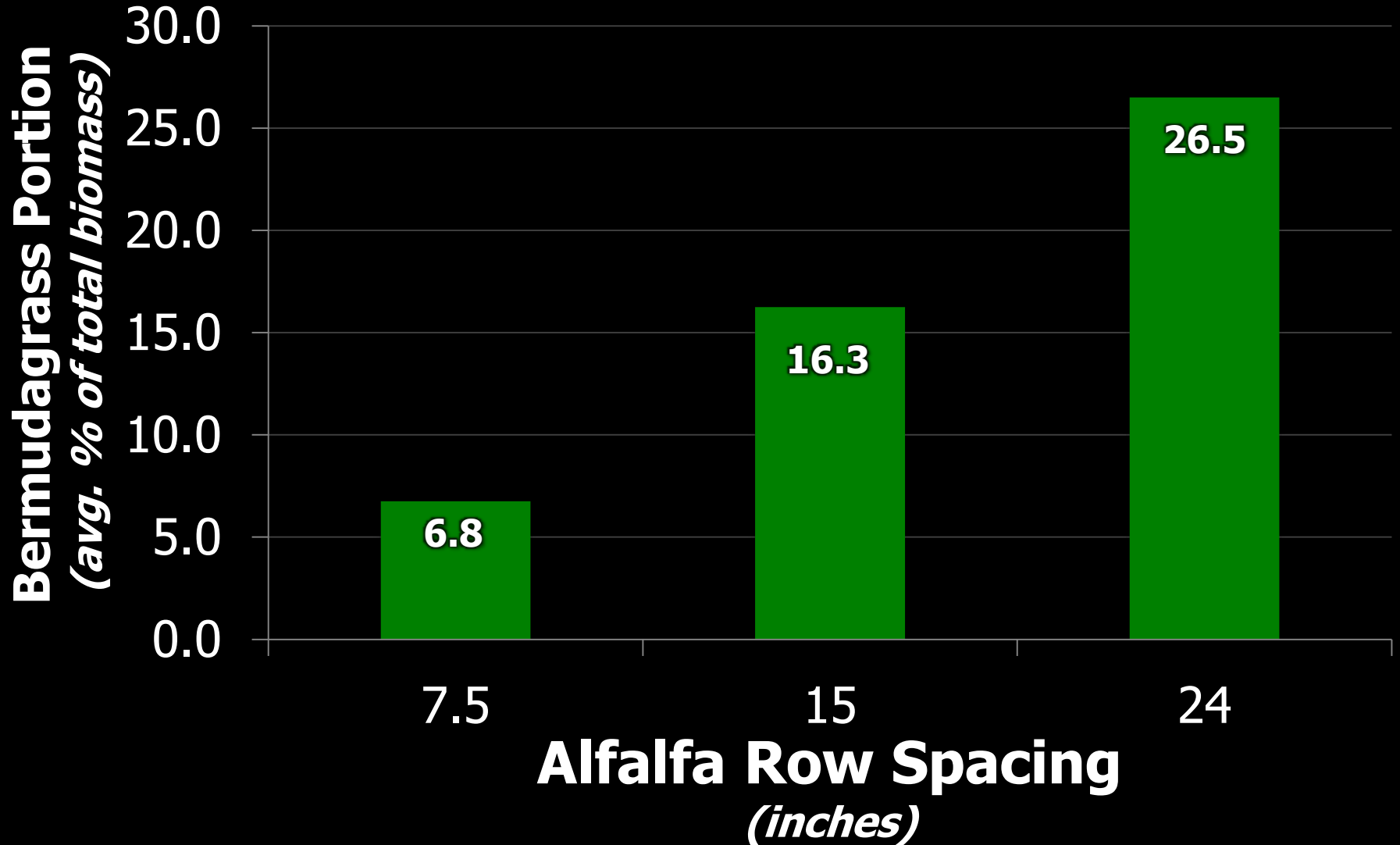
Brown and Byrd, 1990: Eatonton, GA (rainfed)

Forage Yield of Bermudagrass Fertilized w/ N or Interseeded w/ Alfalfa — SC Piedmont



Stringer et al., 1994: avg. of 2 years. Pendleton, SC (rainfed)

Contribution of Bermudagrass Interseeded w/Alfalfa

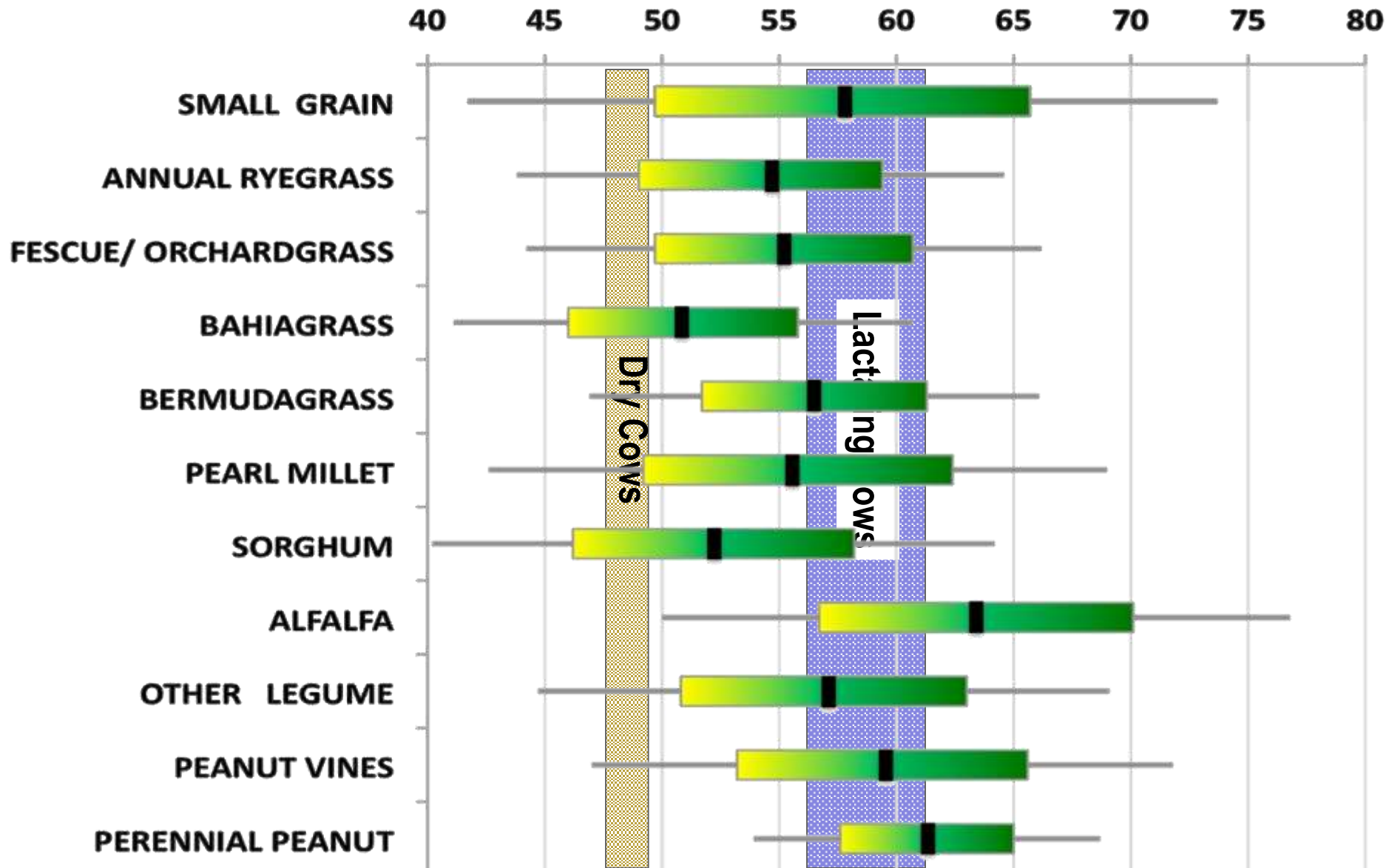


Stringer et al., 1994: avg. of 4 site-years, 2 Piedmont and 2 C. Plain locations (rainfed)

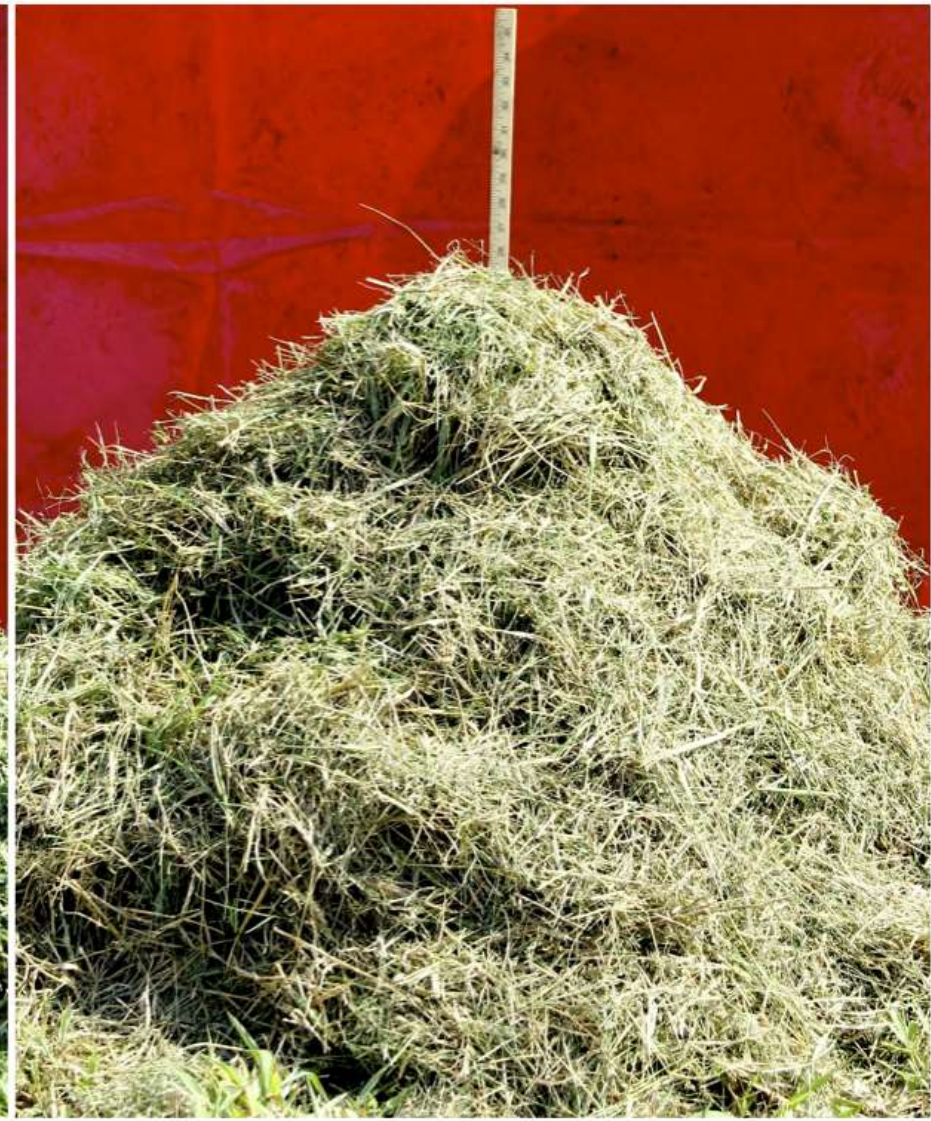
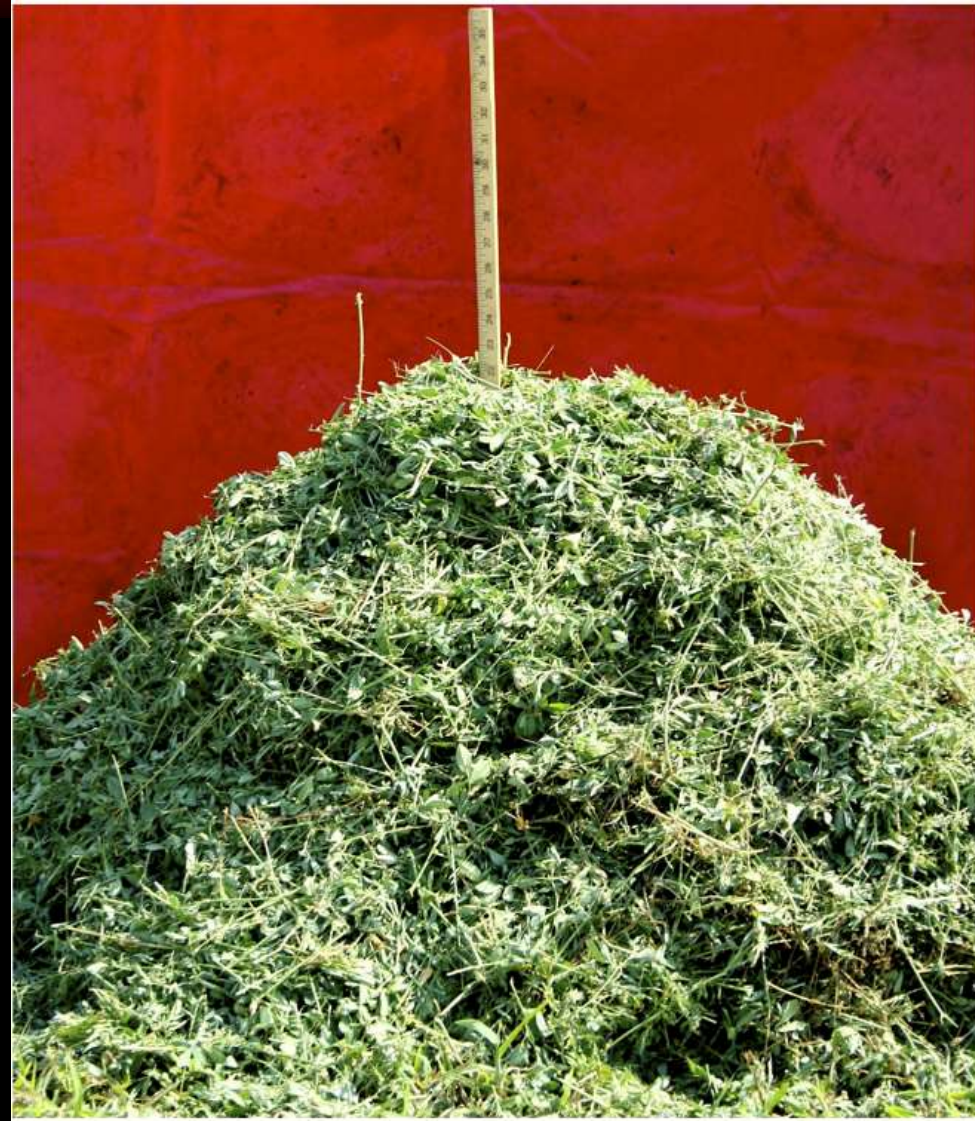


**Adding alfalfa to bermudagrass
increases RFQ by 25-40 points,
CP to 14-18%+, and TDN to
60-64%+**

Total Digestible Nutrients (TDN)



What is the difference?



Quantifying the Difference

Item	Units	Alfalfa	Bermuda
Weight	lbs	25	25
Loose Pile Height	in.	22.5	25.5
Loose Pile Diam.	in.	44.3	60
Approx. Volume	in. ³	12,000	24,000

Quantifying the Difference

Item	Units	Alfalfa	Bermuda
TDN	%	60.2	59.6
RFQ		144.7	110.4
DMI	% of b.w.	3.0	2.3
TDN Intake	lbs per 1000 lbs b.w.	17.8	13.6

24% diff in energy intake

Interseeding Alfalfa in Bermudagrass

- : Grow Your Own N Fertilizer**
- : Increase The Value Of Your Hay**
- : Management Simplification**



7 Keys to Successfully Establishing Alfalfa into Bermudagrass

1. Select a well-drained site
2. Soil test, lime, and fertilize according to the recs.
 - Ideal levels are: pH 6.5, High P, and High K.
 - pH at 1 ft depth should be greater than 5.5.
 - Pay attention to micro-nutrient fertilization needs (B and Mo, as needed)
3. Plant at the right time of the year



7 Keys to Successfully Establishing Alfalfa into Bermudagrass

4. Have bermudagrass very short (1-2 in.) at planting.
 - Spray with a non-selective herbicide:
 - paraquat (Gramoxone) at 1 qt./ac or
 - glyphosate (Roundup) at 9 oz./ac if 5.5 lb. a.i. formulation or at 12 oz./ac if 4 lb. a.i. formulation.
 - It is ok to burn off with fire after the chemical burn down.



7 Keys to Successfully Establishing Alfalfa into Bermudagrass

5. Plant with a no-till drill
 - Seeding rate = 22-25 lbs/ac
 - 7-9 in. rows
 - Plant no deeper than 1/2 in.
6. After emergence, spray with insecticide to control mole crickets/other insect pests
7. Irrigate if available and necessary.



Avoid Areas Treated with Residual Herbicides

- Aminopyralid (GrazonNext, Chaparral, etc.) or picloram (Grazon P+D, Surmount, Tordon, etc.) requires bioassay
 - Delay planting until at least 10-12 months after application (usually)
- Sulfonylureas (Cimarron, metsulfuron, Pastora, Outrider, etc.)
 - Delay planting by 4 months+
- Dicamba (Banvel, Clarity, Weedmaster, etc.)
 - Delay planting by 4 months+

Specimen Label
 Dow AgroSciences
GrazonNext[®] HL

Specialty Herbicide
 Product of Dow AgroSciences LLC

For control of broadleaf weeds and certain woody plants on temperate, permanent grass pastures (including green grass for hay), Conservation Reserve Program (CRP) acres and wildlife management areas in those states. May have been treated with GrazonNext HL within the preceding 12 months and only be used on the farm or ranch where the product is applied/printed or listed by supplemental labeling.

IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT HAZARD TO DESIRABLE PLANTS

- Carefully read the entire "Directions for Use" and "Restrictions to Use" on the product label.
- Do not apply to areas that have been treated with other herbicides within 30 days of application.
- Do not apply to areas that have been treated with other herbicides within 30 days of application.
- Do not apply to areas that have been treated with other herbicides within 30 days of application.

Perage and Moxure Management

Precautionary Statements
 Hazard to Humans and Domestic Animals
 EPA Reg. No. 60719-010
ANGER
 Irritant - Causes Irritation Eye Damage + Hazard if Swallowed
 Do not get in eyes or on clothing.
 Personal Protective Equipment (PPE)
 Wash hands thoroughly after use. See the product label for additional information. Do not eat, drink, or smoke while using this product.

Group	HERBICIDE
Active Ingredient	
Picloram (as picloram salt) 4.00%	4.00%
Amidopyralid (as amidopyralid salt) 0.00%	0.00%
Other Ingredients	95.99%
Total	100.00%

Net Weight: 4.00 lb (1.81 kg) per gallon
 EPA Reg. No. 60719-010



7 Keys to Maintaining Alfalfa in Bermudagrass

1. **Apply K fertility as recommended** (plus some)
2. **Follow K fertility recommendations** (plus some)
3. **Fertilize with K as recommended** (plus some)
4. **Apply B and Mo as recommended**
5. **Take a tissue sample 1 wk prior to the second cutting of each year to determine other fertility needs**
6. **Scout and spray for alfalfa weevils in Feb./Mar. and fall armyworms in summer**
7. **Don't skimp on the K fertilizer**

Alfalfa-Maintenance (Code #026)

Soil Test Rating	Potassium			
	Low K	Medium K	High K	Very High K
	Coast: 0-70 lbs/A Pied: 0-120 lbs/A	Coast: 71-170 lbs/A Pied: 121-250 lbs/A	Coast: 171-275 lbs/A Pied: 251-400 lbs/A	Coast: 275+ lbs/A Pied: 400+ lbs/A
Phosphorus	<i>Recommended Pounds N-P₂O₅-K₂O per Acre</i>			
Low P Coast: 0-30 lbs/A Pied: 0-20 lbs/A	0-100-250	0-100-200	0-100-150	0-100-0
Medium P Coast: 31-60 lbs/A Pied: 21-40 lbs/A	0-70-250	0-70-200	0-70-150	0-70-0
High P Coast: 61-100 lbs/A Pied: 41-75 lbs/A	0-50-250	0-50-200	0-50-150	0-50-0
Very High P Coast: 100+ lbs/A Pied: 75+ lbs/A	0-0-250	0-0-200	0-0-150	0-0-0

Coast = Coastal Plain Pied = Piedmont, Mountain, and Limestone Valley

Recommendations:

Recommended pH: 6.5 to 7.0. If the pH is less than 6.5, see Lime Table

Hybrid Bermudas-Hay (Code #038)

Soil Test Rating	Potassium			
	Low K	Medium K	High K	Very High K
	Coast: 0-60 lbs/A Pied: 0-100 lbs/A	Coast: 61-150 lbs/A Pied: 101-200 lbs/A	Coast: 151-250 lbs/A Pied: 201-350 lbs/A	Coast: 250+ lbs/A Pied: 350+ lbs/A
Phosphorus	<i>Recommended Pounds N-P₂O₅-K₂O per Acre</i>			
Low P Coast: 0-30 lbs/A Pied: 0-20 lbs/A	*-80-250	*-80-200	*-80-150	*-80-0
Medium P Coast: 31-60 lbs/A Pied: 21-40 lbs/A	*-60-250	*-60-200	*-60-150	*-60-0
High P Coast: 61-100 lbs/A Pied: 41-75 lbs/A	*-30-250	*-30-200	*-30-150	*-30-0
Very High P Coast: 100+ lbs/A Pied: 75+ lbs/A	*-0-250	*-0-200	*-0-150	*-0-0

Coast = Coastal Plain Pied = Piedmont, Mountain, and Limestone Valley

Recommendations:

Recommended pH: 6.0. If the pH is less than 6.0, see Lime Table C.

Total Lime and Fertilizer Costs: Alfalfa + Bermudagrass or Bermudagrass

	Soil Test K Levels	Soil Test P Levels			
		20	30	50	90
		<i>(\$/acre)</i>			
Alfalfa	100	-	-	-	-
	125	-	\$162	\$151	\$124
	175	\$161	\$155	\$144	\$117
	250	\$148	\$141	\$130	\$103
	350	\$123	\$116	\$105	\$78
Bermudagrass	100	\$324	\$317	\$305	\$288
	125	\$321	\$314	\$303	\$276
	175	\$321	\$305	\$267	\$188
	250	\$285	\$278	\$267	\$249
	350	\$223	\$216	\$205	\$188

Assumptions: \$0.55/lb of P₂O₅, \$0.42/lb of K₂O, 250 lbs N/acre on bermudagrass @ \$0.65/lb of N, 0.75 tons lime/acre/yr on alfalfa, 0.33 tons/lime/acre/yr on bermudagrass, \$8.00/acre for Mo and Bo on alfalfa.

Alfalfa in the South: Summary

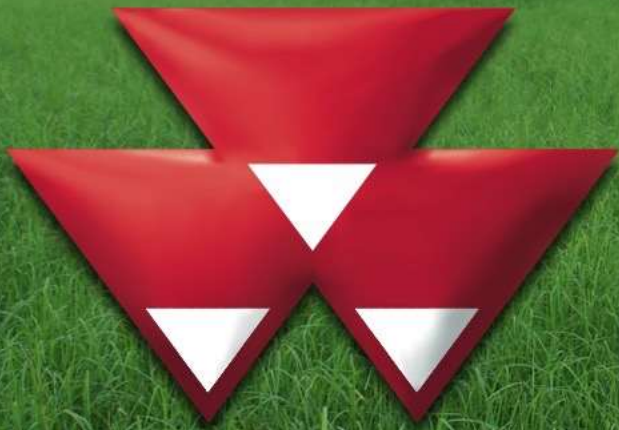
- Grow your own nitrogen
- Increase the quality of your forage (+ 30 or more RFQ points)
- Makes excellent supplemental feed and/or cash hay crop
- Growing with bermudagrass allows alfalfa to dry faster and be harvested clean



Enter for a chance at a **WINNING** combination

Southeastern Hay Contest

Presented by



MASSEY FERGUSON



THE UNIVERSITY OF GEORGIA
COLLEGE OF AGRICULTURAL & ENVIRONMENTAL SCIENCES

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FORAGES

Commodities: Field Crops

Forages

Introduction

The Georgia Forages website is your window to information on a wide variety of forage management issues. This information is extended to you by scientists from the University of Georgia, who continue to research all aspects of forage and livestock management. The recommendations found in this website are based on peer-reviewed research conducted in Georgia and...

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Stockpiling Bermudagrass for Fall Grazing	-- PDF
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