Georgia Forages Conference

Management strategies for intensive, sustainable beef cattle production on bermudagrass

Management Strategies for Intensive, Sustainable Beef Cattle Production on Bermudagrass Pastures

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2018 Georgia Forages Conference
Georgia Cattlemen's Convention

Bermudagrass Pastures and Cow-Calf Performance

MARCH MADNESS !!

Basketball Tournaments
and
Pasture Management

March Madness Management Checklist

- **Warm-season perennial grass pastures/hay**
  - **Weed control and herbicides**
  - **Fertilization requirements; Soil Test**
  - **Drought-Freeze damage assessment**
  - **New plantings; site preparation; cultivar selection; timing**

March Madness Management Checklist

- **Cool-season annual grasses/legumes**
  - **Increased forage DM; adjust stocking rates**
  - **Fertilization requirements to extend production**
  - **Breeding-weaning projections**
  - **Reseeding clovers-ryegrass;hay options**

Intensive Production

- Multiple Definitions for Management Strategies
- Multiple Approaches and Objectives
- Overall Emphases–
  - –Enhance/Increase Production
  - –Increased Stocking Rate and/or Pasture Utilization
  - –Economic Decisions & Net Returns Per Animal/Acre
  - –Sweat and Stress?

SUSTAINABLE

The US Roundtable for Sustainable Beef

- Multil-Stakeholder Initiative developed to support sustainability of the United States Beef Value Chain (USRSB-2016).
- The USRSB works in collaboration with the Global Roundtable for Sustainable Beef to meet Beef Value Goals (GRSB-2016).

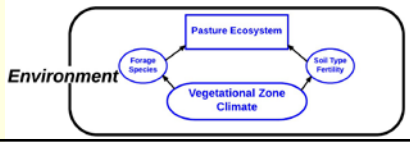
GLOBAL ROUNDTABLE for SUSTAINABLE BEEF, 2016

"Sustainable Beef"

- Socially Responsible
- Environmentally Sound
- Economically Viable Product

Priortizes: a) Natural Resources,
b) Efficiency & Innovation,
c) People & Community,
d)Animal Health & Welfare, and e) Food.

Management Strategies for SUSTAINABLE Pastures & Beef



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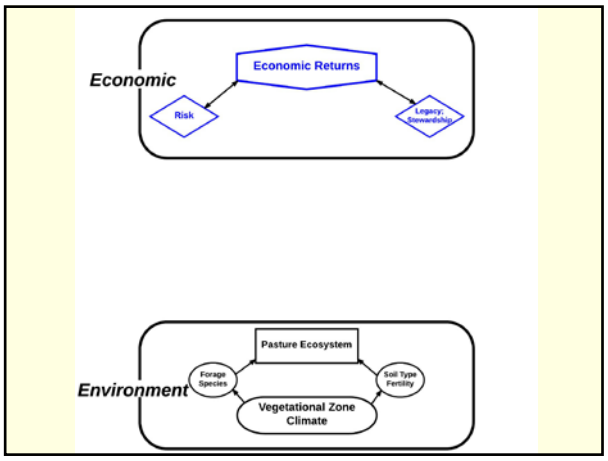

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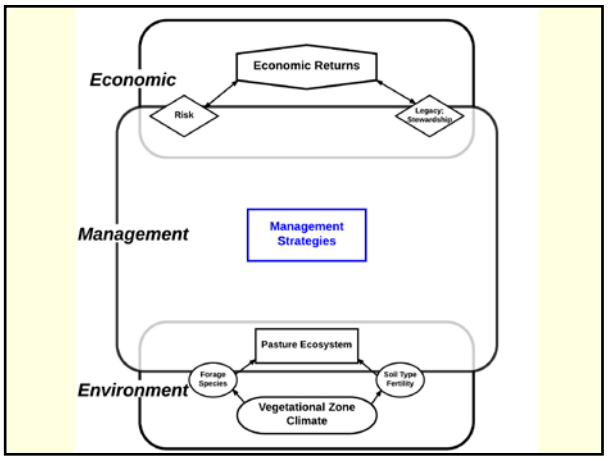

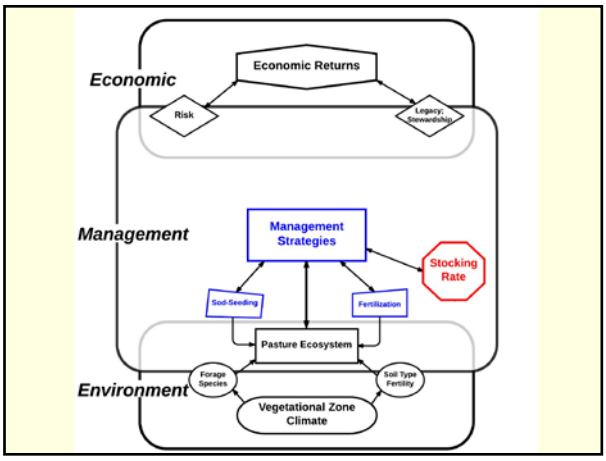

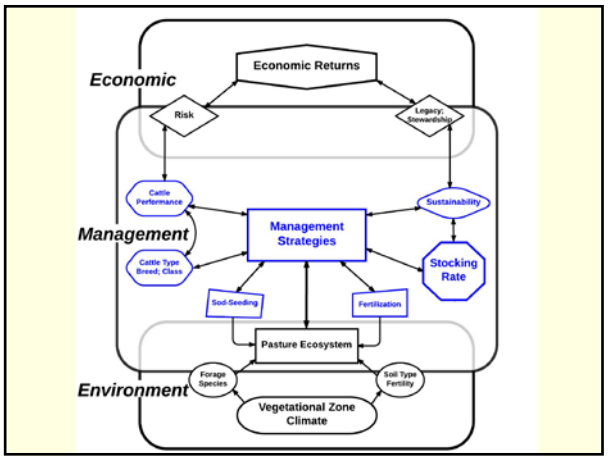

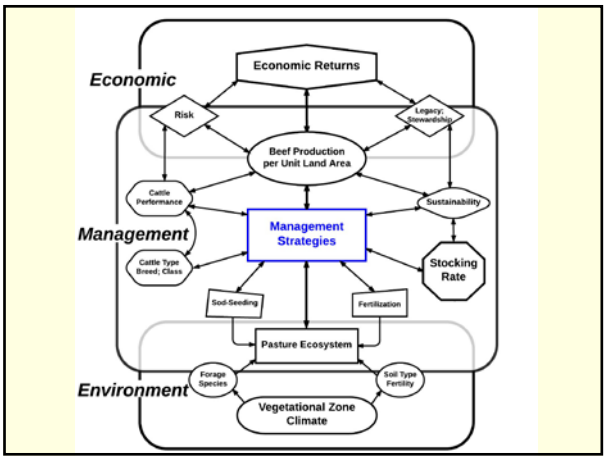

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Management of Pastures

- Constant realignment and integration of Cause-Effect Actions… Coupled with…
- Decision-based, Heuristic Inputs…that…
  - Influence Forage Growth,
  - Utilization Regimens;
  - Stocking Strategies
- That Affects…
  - Pasture-Animal Production
  - Sustainability of Forages & Pastures
  - Economic Rewards

Factors Influencing Strategies for Management

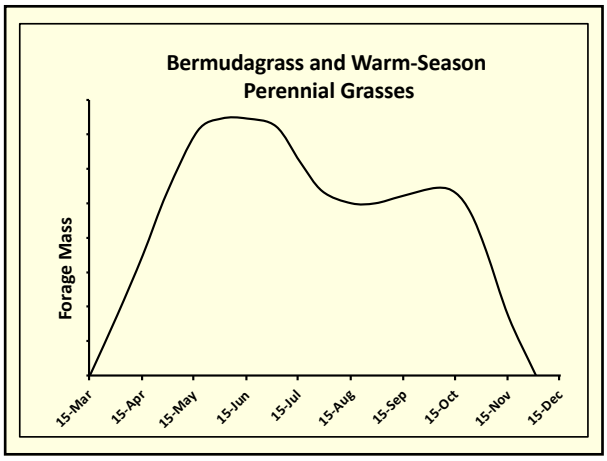
- Enhance Efficiencies
  - Economical - Costs, Returns, Profit
  - Biological - Optimize, Maximize
- Reality vs Perceptions for Plan of Action
- Implementation ➡ Results
- Recover, Re-adjust, New Implementation
- Keep Records…Don't Forget!!

Grazing Management Strategies for Bermudagrass Pastures

Forage Calendar

JAN	FEB	MAR
APR	MAY	JUN
JUL	AUG	SEP
OCT	NOV	DEC

Warm Season Perennial Grasses



Stocking Strategy

- Approach to Forage Utilization via
- Stocking Rates
- Stocking Methods

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Factors that Influence, Define, & Refine Stocking Strategies

- Stocking Methods
  - –Continuous
  - –Rotational
- Flexible / Adaptive Stocking
- Economic Goals & Objectives and Risk-Aversion Awareness

Stocking Strategies – Decision Indicators

- Databases; Comparative Information
- Visual Assessments
  - – Pasture Height
  - – Patch Grazing/Refusals
- Expectations of Forage Growth/Production
  - – Weather; Season(s)
  - – Soil Fertility; Fertilization
  - – Nutritive Value
- **Art & Application**

Prerequisites for the Art of Stocking Strategies

- Knowledge and expertise with forage species growth and regrowth attributes
- Experience with animals and animal husbandry
- Intuitive application of decisions for input-outputs
- Knowledge of current, forecast, and strategic weather conditions in specific vegetational zone

Prerequisites for the Art of Stocking Strategies

- Ability to assume and take risks associated with stocking intensity outcomes
- Constant awareness of impact on sustainability of vegetation and land resources
- Have an alternative site or escape-route for animals in event of extreme, unfavorable climatic conditions

Grazing Management Strategies

- Be Prepared for Forage Growth x Climatic Conditions…Rainfall
- Take advantage of Dynamic Forage Growth Rate created by Soil Fertility, Fertilization, Rainfall; Temperature; Season of Year
- Use Flexible Stocking Strategies

…. Nothing is Fixed!!

Management Strategies

- Match Forage DM & Nutritive Value with Cow-Calf Requirements
- WSPG + Overseeded Small Grain, Ryegrass, Clover
- Standing Hay; Deferred Forage
- Hay; Supplementation
- Calving Season(s)
- Breeding Season(s)
- Pregnancy Rate
- Weaning Date(s); Weaning Weight

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Management Strategies

- Stocking Rate – Forage Utilization
  - Cow-Calf
  - Dry Cow
  - Stocker
- Body Weight & BCS; Maintain – Gain – Lose
- Cull – Replacements
- Sale – Merchandize
- Cash Flow

Top Five Rationales Used For Culling Cattle

STOCKING RATE & GRAZING INTENSITY

Stocking Rate

is More Important Than

Stocking Method

Proper Stocking Rate

- What is it?
- What's the duration?
- How to know?
  - ♦ Visual, Subjective?
  - ♦ Measurement, Quantitative?

Take a Look at Pastures!!!

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STOCKING

RATE

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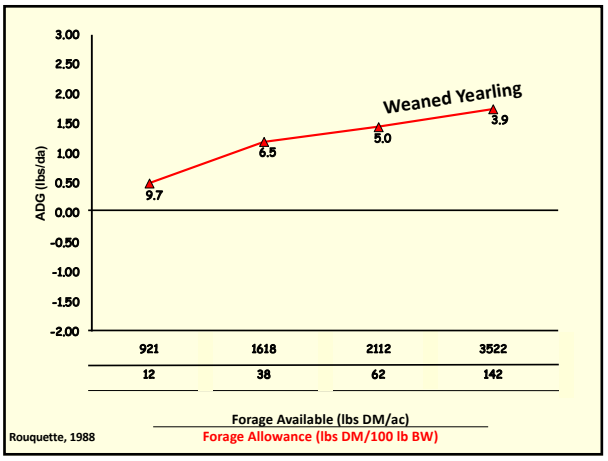
. . . it depends

Stocking Rates are . . .

- Site Specific ; ZIP-CODE
- Controlled by Management

  Decisions & Strategies !!



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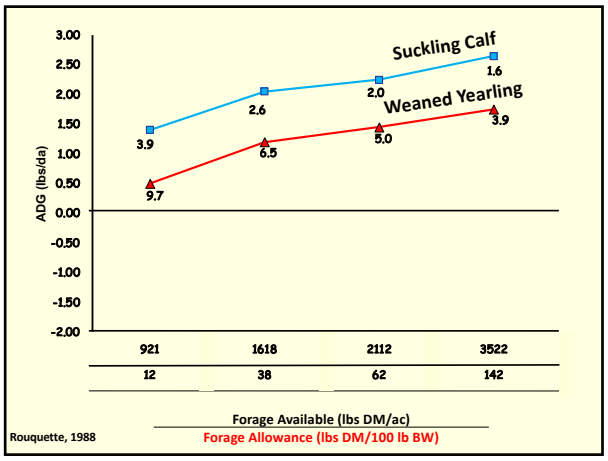

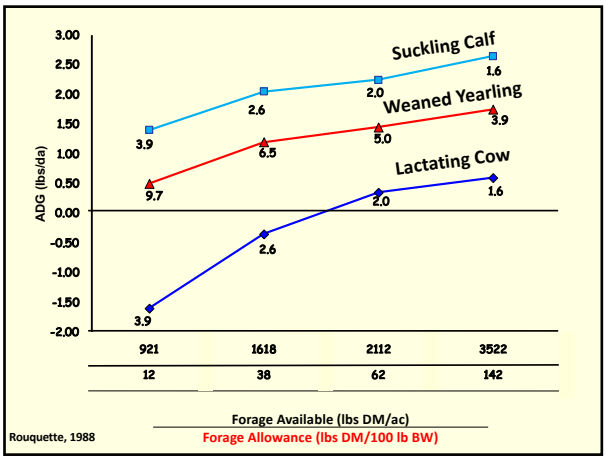

Stocking Rate & Forage Availability: Performance of Cow-Calf vs Dry Cow

Stk Rate	Forage Avail	Calf ADG	Lactating Cow			Dry Cow		
	lbs/ac	lbs/da	ADG	BCS		ADG	BCS	
				Init	Final		Init	Final
LOW	3275	2.30	0.20	5.0	5.0	N/A	N/A	N/A
HIGH	1400	1.12	- 1.66	5.0	4.3	- 0.30	6.7	6.6

Cow-Calf Operations

and/or

Stocker Programs

Stocking Strategies to Enhance Stocker Gain from Bermudagrass Pastures

- **Animal Genotype-Class**
  - Age
  - Weight
  - Body Condition
  - Brahman-influence
- **Forage Cultivar Selection**
  - Tifton 85 has highest nutritive value and ADG
- **Stocking Rate**
  - With "ceiling ADG" of ≤ 1 lb/da… increase Stocking Rate to Optimum Gain/ac

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Tifton 85 Bermudagrass

Pasture – Animal Niche

- Opportunities
- Challenges
- Successes

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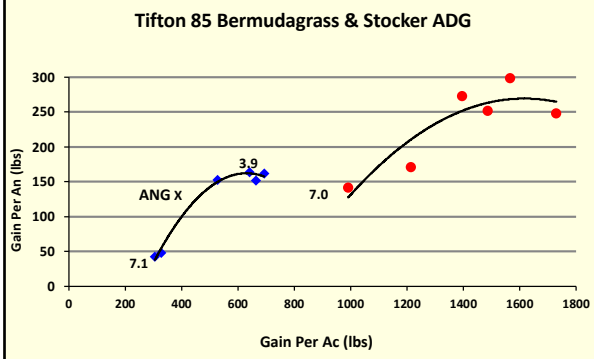
Grazing Management Strategies



Nitrogen Drives Grass Production

Nitrogen Fertilization Scenarios for Tifton 85 Bermudagrass

- **Fertilization Rate with Soil Test**
  - 150 to 200 lbs N/ac
  - N Costs ≈ $0.50 to $0.60/lb N
  - Cost/ac = $83 to $110
  - Gain/ac = 500 to 1500 lbs/ac

Nitrogen Fertilizer Cost per Pound Gain

Stocker Gain	$100/ac Cost	$150/ac Cost
lbs Gain/ac	Cost/lb Gain	Cost/lb Gain
500	0.20	0.30
750	0.13	0.20
1000	0.10	0.15
1250	0.08	0.12
1500	0.07	0.10

* N cost @ $0.55/lb N.

Where are we headed?

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Good news…..

Bad news…..

Good News

- Warm-season perennial grasses are the base-pasture grass in Southern US, and produce highest total Forage DM/ac.

Bad News

- Warm-season perennial grasses are in the Category of Lowest Nutritive Value of all Forages.

Stocking Strategy

- Approach to Forage Utilization via
- Stocking Rates
- Stocking Methods

Grazing Management & Stocking Methods

- Continuous Stocking
- Rotational Stocking

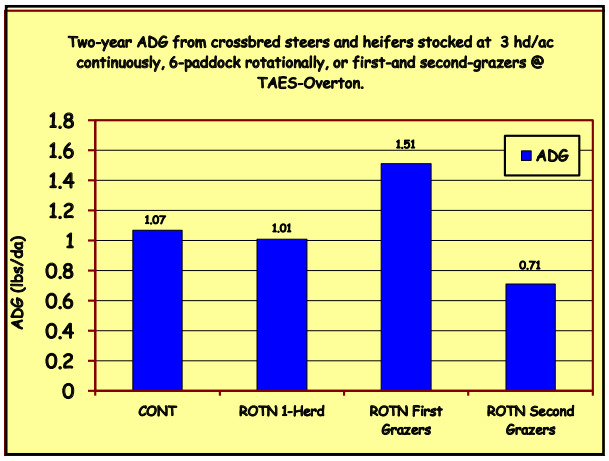
PERCEPTIONS VS REALITY OF ADVANTAGES FOR ROTATIONALLY STOCKED PASTURE SYSTEMS

Movement Schedule

- BG leaf growth – 21-day optimum
- Residence time – 1 day to 7 days
- Depends on
  1. Stubble height of grazed pasture
  2. Deferment period or age of new pasture

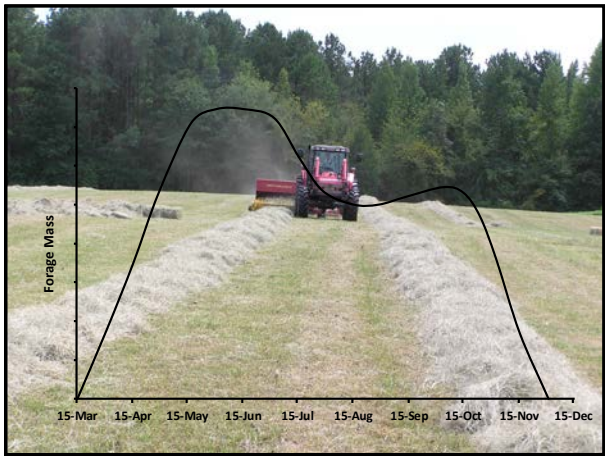
Rotational Stocking Considerations for Bermudagrass

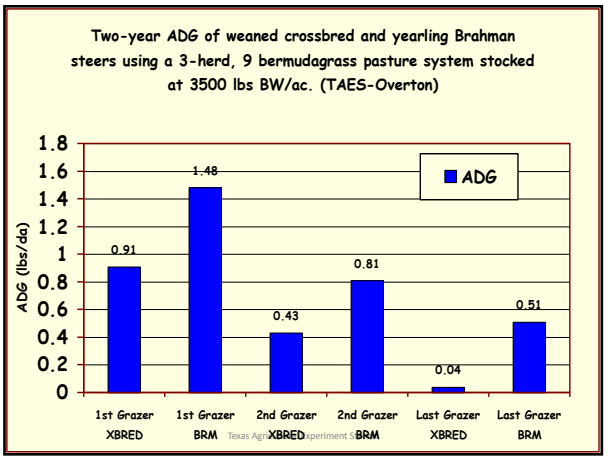
- At the same SR, no Animal Gain advantage from Rotational Stocked *vs* Continuous Stocked pastures
  - ❖Why??
  - ❖Forced consumption of forage in lower strata of pasture=lower nutritive value.



Rotational Stocking Considerations for Bermudagrass

- How to optimize performance
  - —Graze only top 1/3 to 1/2 of forage, then move to new pastures
  - —Multiple herds
  - —Harvest excess for hay





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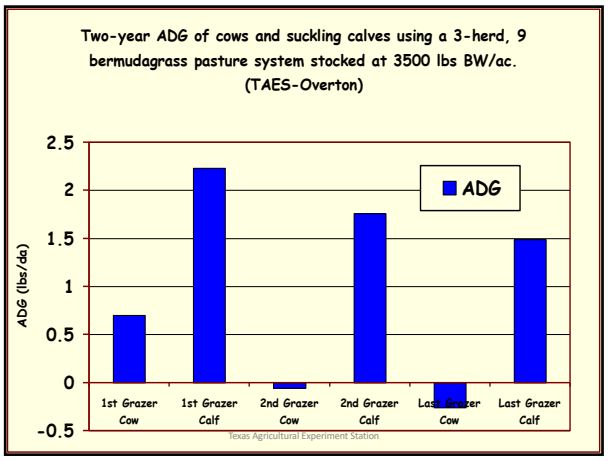

Stocking Strategies to Optimize Forage Use and Animal Performance

- **Flexible Management**
  - –Rotate cattle/pastures with forage-performance TARGET
  - –First-Last Grazers
  - –Creep Grazing

Stocking Rate
is More Important Than
Stocking Method

WHY is there a departure-disconnect from Research-based Information to Application Recommendations for Stakeholders?

Rotational Stocking or Not ?

- **Pasture Research shows limited to no advantages for use of Rotational Stocking**
- **State Extension Bulletins and Popular Press encourages Rotational Stocking**

Why do stakeholders provide repeated positive testimonials regarding rotational stocking?

- **No comparison between continuous vs rotational stocking**
- **Managers more comfortable with forage mass conditions and control by combining grazing and haying-baleage-silage**
- **Rotational stocking regimens mandate regular assessment- inspection of forage-animal conditions**

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Why do stakeholders provide repeated positive testimonials regarding rotational stocking?

- Rotational stocking is better fit for adapting to pastoral and animal husbandry management skills.
- Managers perceive that rotational stocking provides added value to soil-plant interface and enhanced animal performance
- Managers are smarter than Grazing Researchers !!

Rotational Grazing "Rules"

Overstocking wrecks the system...

GAME OVER !!!

Management Strategies for Intensive-Sustainable Bermudagrass Pastures in Southeastern US

- Bermudagrass Cultivar(s); Mass & Quality
- Fertilization Regimens
- Use of Small Grains, Ryegrass, and/or Clovers
- Utilization-Stocking Rates; Gain/an; Gain/ac
- Ecosystem Sustainability & Resource Stewardship
- Calving Season(s) & Hay-Supplement
- Integrated Stockers with Cow-Calf; G x E
- Flexible Implementation Strategies & Economy of Production; Merchandizing Livestock

Basketball Players and Pasture Managers

- Remember the game plan !!
- Forget the missed shot !!
- You can't score if you don't shoot !!
- Don't foul out !! You can't win if you aren't in the game...!!
- Game's not over 'til the buzzer sounds.. Be persistent !

Animal Management Strategies to Offset High Input Costs

- Cull Cows
  - *Efficiency *Productivity *GxE
  - *Age *Disposition
- Alter Calving Season
- Weaning Percent, Weight
- Sale Weight
- Marketing Strategies

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God Bless America