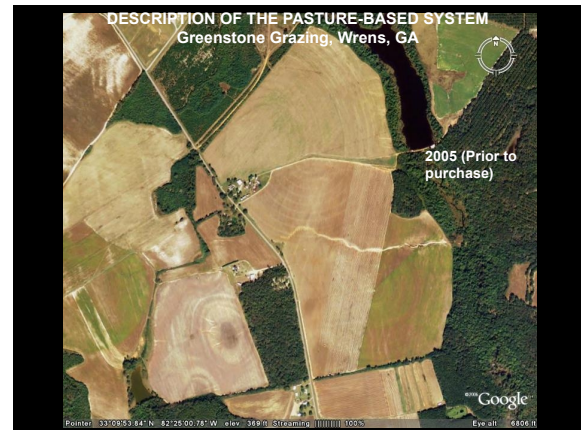


Forage Production Data from Pasture-Based Dairies in Georgia

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Long-term objective:

Develop a robust data set by which we can predict forage production/quality and develop a model by which forage systems can be developed to optimize use of natural resources (soil types, water, fertilizer inputs) that match with utilization patterns of the MiG dairy enterprise.

Funding for forage research to support pasture-based dairies is limited because:

1. Few recognize the potential for driving economy.
2. Research venues are limited.
3. It is viewed as mundane and routine.
4. There is a lot of BAD data out there that is assumed to be relevant (but is not).
5. It is labor intensive.
6. Funding agencies view pasture-based dairying as a solution to an environmental issue, not an economic development opportunity.
7. I'm from the '60s, so I blame everything on the industrial complex.

Forage experiments to support pasture-based dairy

- Winter annuals – Rye, ryegrass, oats, blends – harvested as utilized in production
- Perennial legumes/forbes – Alfalfa, white clover, red clover, chicory – harvested as utilized in production
- Perennial cool season grasses – tall fescue, perennial ryegrass, orchardgrass – harvested as utilized in production
- Perennial warm season grasses – bermuda, bahia, different harvest frequencies (10-30 days)

All samples analyzed for forage quality – NIR with wet chemistry validation.

Forage experiments to support pasture-based dairy

- Winter annuals – Rye, ryegrass, oats, blends – harvested as utilized in production
- X Perennial legumes/forbes – Alfalfa, white clover, red clover, chickory – harvested as utilized in production
- X Perennial cool season grasses – tall fescue, perennial ryegrass, orchardgrass – harvested as utilized in production
- Perennial warm season grasses – bermuda, bahia, different harvest frequencies (10-30 days)

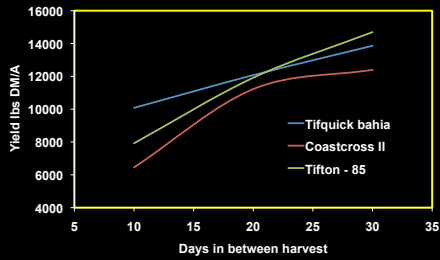
Forage Trials – Yield Distribution, Quality 3-year summaries



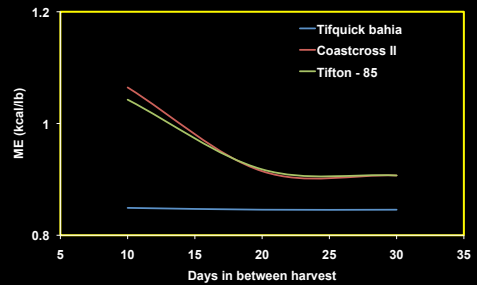
Winter annuals, harvested based upon simulated grazing interval

Bermuda, bahia grass: harvested at different frequencies

Effect of harvest frequency on yield of 3 warm season grasses grown under irrigation



Effect of harvest frequency on ME of 3 warm season grasses grown under irrigation



Season-long Yield Distribution and Energy Density of Forages Used in a Pasture-based Dairy System

Month	Rye/Ryegrass mix		Tifton-85	
	DM (lb/A)	ME (kcal/lb)	DM (lb/A)	ME (kcal/lb)
Jan	463	1.19		
Feb	956	1.20		
Mar	2484	1.15		
Apr	3606	1.14		
May	1484	1.06	1400	0.94
June			2621	0.92
July			2740	0.92
Aug			3079	0.92
Sept			2263	0.92
Oct			1310	0.93
Nov	1203	1.24		
Dec	1000	1.20		

Pasture Dry Matter Intake by Cows at Different Pasture Energy Density

(Holmes et al., 2007, Massey Univ. Press)

	Animal Live wt (lbs)	Energy in diet (kcal/lb DM)		
		> 1.15	0.98-1.15	0.82-0.98
Dry Mature cows	771	19.8	16.1	11.0
	881	22.0	17.8	12.1
	991	24.0	19.4	13.4
	1101	26.2	20.9	14.5
Pregnant cows	771	23.8	20.3	17.4
	881	26.4	22.5	19.4
	991	28.9	24.4	21.1
	1101	33.5	26.7	22.9
Lactating cows	771	34.1	27.8	--
	881	35.2	33.0	--
	991	39.4	33.5	--
	1101	42.1	36.3	--

