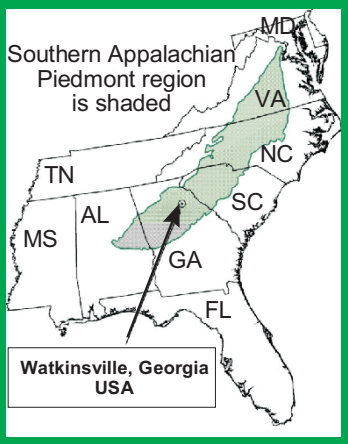
Bermudagrass Management - Productivity and Persistence

Agricultural Research Service



J. Phil Campbell Sr. Natural Resource Conservation Center

1420 Expt. Station Rd.
Watkinsville GA 30677

Tel: 706-769-5631
Fax: 706-769-8962
www.spcru.ars.usda.gov

Research Team

Alan Franzluebbers
afranz@uga.edu

John Stuedemann
Stan Wilkinson
Steve Knapp
Dwight Seman

Research from the Soil Resource Management and Rangeland-Pasture-Forages National Programs

JPC Research Note - 09

Why does it matter?

Productivity and persistence of 'Coastal' bermudagrass are key long- term variables that can affect economic returns and environmental quality.

Whether grass is cut for hay or grazed by cattle not only influences time of utilization and quality of forage, but could also affect long-term productivity.

What was done?

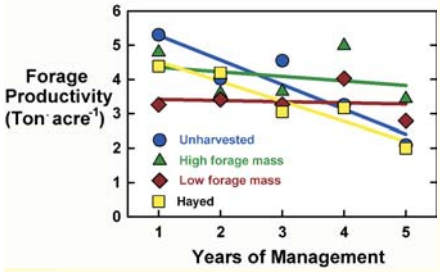
Forage was sampled monthly in summer during 5 years of Coastal bermudagrass management. Pastures were managed in 4 different ways, representing a gradient in:

forage utilization ↕
- high — hayed monthly
- high grazing pressure
- low grazing pressure
- low — unharvested

Yearling steers (2.4 and 3.4 head/acre) grazed standing forage to 2.0 and 1.1 ton/acre.

What was found?

Forage productivity shifted with time, where grazed pastures became more productive than hayed and unharvested stands. Accumulation of soil organic matter and nutrients under grazed management may have contributed to this shift. Coastal persistence was greatest in pastures grazed to a high forage mass, which repressed weeds and clover competition.



Precipitation (inches)	63	55	49	62	49

Percent ground cover averaged from May to September.

		— End of 5 years —			
Component	Initial	UH	HFM	LFM	H
Coastal berrmuda	81	53	78	57	67
Common bermuda	2	0	1	7	3
Others (annuals, etc.)	5	12	10	15	25
Bare ground	12	35	11	21	5

UH=unharvested, HFM=high forage mass, LFM= low forage mass, H=hayed.

A full description of this research can be found in the article:

Franzluebbers AJ, Wilkinson SR, Stuedemann JA. 2004. Bermudagrass management in the Southern Piedmont USA. X. Coastal productivity and persistence in response to fertilization and defoliation regimes. Agronomy Journal 96: 1400-1411.

What's the impact?

Moderate grazing of Coastal bermudagrass improved productivity with time relative to haying.

Grazing pressure altered forage components and could impact economics and environmental quality.