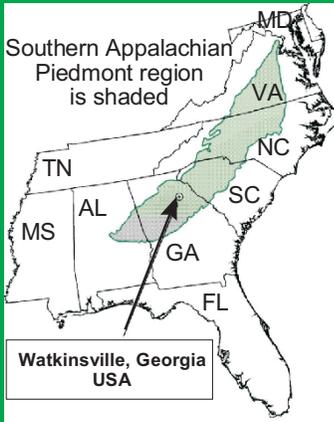




## Agricultural Research Service



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National Program

JPC Research Note - 01

# Bermudagrass Management

## Carbon Sequestration

### Why does it matter?

Soils in the warm, humid southeastern USA have been degraded from decades of previous intensive cultivation.

Carbon sequestration in soils can help

- (1) offset rising atmospheric CO<sub>2</sub> concentration, which contributes to global warming
- (2) increase productivity of soil.



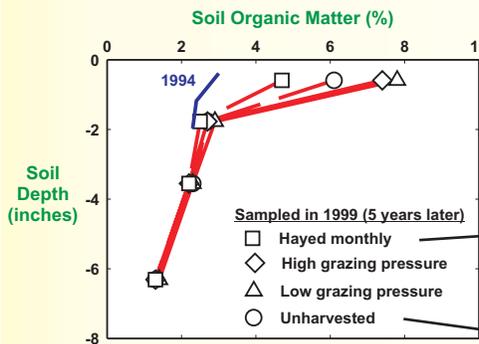
### What was done?

Soil was sampled yearly from 'Coastal' bermudagrass pastures managed in 4 different ways following cropland, representing a gradient in:

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

### What was found?

At the end of 5 years, soil organic C was restored with all management systems, but more so with grazing than unharvested or haying. Changes were evident nearest the soil surface only.



Carbon accumulation (lb/acre) at the end of 5 years.

soil (0-2.4")	surface residue	total
1287	771	2058
6259	1334	7593
6312	1854	8166
2904	2204	5108

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

Franzluebbers AJ, Stuedemann JA, Wilkinson SR. 2001. Bermudagrass management in the Southern Piedmont USA. I. Soil and surface residue carbon and sulfur. Soil Science Society of America Journal 65: 834-841.

### What's the impact?

Degraded cropland converted to pastureland may be a potentially large sink for the sequestration of CO<sub>2</sub> from the atmosphere into soil.