



Agricultural
Research
Service

South
Atlantic
Area

J. Phil Campbell Sr. Natural
Resource Conservation Center
1420 Experiment Station Road
Watkinsville GA 30677-2373

P: 706-769-5631
F: 706-769-8962
www.spcru.ars.
usda.gov

Cropping with Poultry Litter in the Southeast

Why Does it matter?

The poultry industry continues to be a major source of income for producers in the South. The total value of the poultry production industry in Georgia alone exceeds \$13 billion. Poultry litter, a concomitant product, is recognized as a valuable organic fertilizer. It is a source of many nutrients including N, P and K. However, most is usually spread in pastures around production facilities more as waste disposal strategy than fertilizer. Quantified benefits of use of poultry litter in row crops and potential environmental consequences are lacking in the South.

What was done?

Ammonium nitrate or ammonium sulfate (conventional fertilizers) and poultry litter were compared for yield of cotton and corn (five years each), on a Cecil soil, one of the dominant soils in the Southeast, under either conservation or conventional tillage. A rye cover crop was used in both. Build up of soil P was also compared.

What was found?

Over five years, a 2 tons per acre per year poultry litter application with conservation tillage increased lint yield by 42% compared to conventional fertilizer with conventional tillage. The litter enhanced yield by an extra 10% compared to conservation tillage with conventional fertilizer. Similarly, corn yield was enhanced by 31% by combination of litter and conservation tillage compared to only 11% with conservation tillage and conventional fertilizer. There was no build up of soil P



over five years during the cotton period – an important finding that alleviates environmental concerns. Careful fertilizer management can avoid potential build up of soil P under corn (5 tons per acre per year litter application).

What is the impact?

About 11 million tons of litter is produced annually in the US and 50% of the broiler production is concentrated in AL, AR, GA, and NC. With increased adoption of conservation tillage in the South in corn and cotton production, there is potential for substantial enhancement of economic returns both to crop and poultry producers if use of poultry litter in row crops is encouraged on larger scale. Use of poultry litter in row crops will reduce concentrated use in pastures around production facilities and reduce environmental risks.

Research Team and Contact information

Cooperating Scientists:

ARS: Dinku Endale, Harry Schomberg, Michael Jenkins, Wayne Reeves, Ron Sharpe

UGA: Miguel Cabrera, Mark Risse, Julia Gaskin

Contact: Dr. Dinku Endale, 706-769-5631 x 239 dendale@uga.edu
