

# Alternate Fertilizer

*With Proper Management, Poultry Litter Can Boost Cotton Production*

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**P**oultry litter to subsidize fertilizer application for cotton production is a procedure under study by Dr. Josh Lofton, new research agronomist as of May 1, 2012 at the Macon Ridge Station in Winnsboro, La.

"We are actually looking into poultry litter applications on cotton production both in the Macon Ridge region as well as the Mississippi alluvial region," he said. "As fertilizer costs continue to increase, a lot of people have been interested in alternative fertilizers and poultry litter is one that is readily available within this region."

When implementing an alternate fertilizer, the first question to consider is how beneficial that alternate fertilizer can be compared to the traditional inorganic fertilizer.

"What we've found both here at St. Joseph and at Macon Ridge is that the application of poultry litter can increase cotton yields between a half bale to a bale on both soil types, so we see that as very beneficial," Lofton said.

The application rate is the next consideration. How much poultry litter is needed? If you use a high rate of poultry litter to satisfy nitrogen needs for the year for the cotton production system, then there's the risk of a high amount of nutrient loading in run off both in irrigation and rainfall events. Also, this results in a high buildup of phosphorus, both total and soluble, in the soil system.

"This can be very dangerous to the environment around your production system," he cautioned. "We found that if you decrease that to only a half rate to where you're satisfying half of your nitrogen needs and supplementing with inorganic nitrogen, then you still get that same high production yield of almost two-bale cotton in the Macon Ridge area and over two-bale cotton in the Mississippi alluvial."

"However, you are decreasing that total and soluble phosphorus in your runoff as well as decreasing the amount of phosphorus in your soil," Lofton added. "With any poultry litter application you are going to see quite a bit of buildup of phosphorus in your soil system. Both the soil system and the poultry litter can be properly managed very similarly. This includes proper sampling."

To sample, you need to collect over 15 soil cores within your management zone and then, for the poultry litter sampling, you need to col-

lect quite a few samples throughout your pile of litter. This includes on the edges as well as within the middle of the pile.

"Once these are analyzed and the soil nutrients stabilized, the next step to consider is storage," he said. "Usually you have to get that poultry litter at least a couple of months before you want to apply it so proper storage is key. You need to cover it up to minimize the rainfall



**Dr. Josh Lofton, research agronomist at the Macon Ridge Station in Winnsboro, La. discusses a study looking into poultry litter to subsidize fertilizer application for cotton production.**

Photo by John LaRose, Jr.

impact. You don't want the nutrient runoff because it's going to impact the environment as well as decrease the nutrient content of the litter. So you need proper storage."

Lofton suggests you find a highly drained area, cover it with a plastic tarp and make sure that tarp is anchored well. Then, if you are in a windy area you want should compact that a little bit, roll over it with a four wheeler, a gator or even a small tractor to minimize the poultry litter in the air.

Poultry litter is an acceptable answer if you're looking for an alternate fertilizer for cotton.

"You just have to manage it properly so you're not decreasing your cotton yields or causing a negative impact on the environment. Δ

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