Poultry Litter In Production Fields: A More Affordable Fertilizer For Southern Farmers

MILAN, TENN.

Producers everywhere are feeling the pinch of higher prices for fertilizer and other production inputs.

Several talks at the July 24 Milan No-Till Field Day will address methods to conserve on the cost of inputs, and while many will focus on the use of no-till and conservation tillage production methods, two biosystems engineers with the University of Tennessee plan to discuss the use of poultry litter as a more affordable fertilizer.

Forbes Walker and Constance Hugo, both with the UT Biosystems Engineering and Soil Science Department, say poultry litter is an excellent alternative fertilizer source that can be used on both forages and row crops.

"In the United States the production of broiler chickens is concentrated in the southeast," says Walker. "Increases in global oil prices and an increased demand for fertilizers from some developing countries have resulted in dramatic increases in fertilizer prices in the past year. Many agricultural producers are looking for locally available, cheaper fertilizer sources," he says.

One alternative is poultry litter.

Poultry litter is a mixture of manure excreted by the birds and bedding materials used in the poultry house. The nutrient content of poultry litter varies depending on the type and size of poultry being raised, the type of bedding material, the age of the litter and how it was handled and stored after being removed from the poultry house.

"The age of the litter may vary and have an impact on nutrient content," Walker elaborates. "Typically decaked litter is removed between grow-outs and stored before land-application in the spring or fall. Additionally growers will remove all the litter from the house after several grow-outs. How the litter is managed, handled and stored before land application can have a significant impact on its value as a fertilizer."

Before applying poultry litter as a fertilizer source producers should follow the University of Tennessee soil test recommendations from soil samples taken from each field where litter is to be applied and should base their application rates on nutrient analyses of the fertilizer and on the crop's requirements. Walker and Hugo recommend that an analysis be conducted to determine the litter's nitrogen, phosphorus and potassium content. Walker says a typical broiler litter will have a nitrogen (N), phosphorus (P) and potassium (K) content similar to a 2-2-2 or 3-3-3 NPK fertilizer, or around 30 lb of plant available nitrogen and 40 to 60 lb of phosphorus (as P2O5) and potassium (as K2O) per ton. At current prices this represents a nutrient value of approximately over $40 per ton. Storage of litter will often increase phosphorus and potassium concentrations.

The soil scientists say application methods should be selected that do not negatively impact the environment or the crop quality. "Applying poultry litter to meet crop nitrogen needs will result in the over-application of both phosphorus and potassium," Walker maintains. "This may negatively impact forage quality. Poultry litter applications should be made to meet the crop phosphorus or potassium needs. Crop nitrogen requirements should be supplemented with a commercial nitrogen fertilizer," he says.

For corn, a pre-sidedress nitrate soil test should be performed to determine any additional nitrogen requirements. For fescue hay or pasture fields, Walker says forage samples will determine the potential risk from grass tetany, especially on soils that test high or very high for potassium.

Visitors to the Milan No-Till Field Day can catch Walker and Hugo on Tour M – Nutrient Management – Alternative Nutrient Sources/Enhancement Products. Other speakers and topics on the tour include Improving Efficient Use of Urea N (urease inhibitors), a talk by Richard Joost, Professor of Agriculture at UT Martin, and Frank Yin, Assistant Professor of Plant Sciences at UT Knoxville. Also featured on the tour are Paul Denton, Professor of Plant Sciences at UT Knoxville and John Campbell, UT Extension Area Specialist in Farm Management discussing the economic value of nitrogen from cover crops.

Complete information is available online at http://milan.tennessee.edu/MNTFD/ . Δ