

INSIDE GRUNDY COUNTY
By Bill Arndorfer
Grundy County Extension education Director
October 14, 2005

The key to maximizing benefits from fall application of anhydrous ammonia or manure with high ammonium N content is fifty degrees. Soil temperatures of fifty degrees or less and cooling are important to minimize nitrogen losses. With harvest well underway, some farmers are already preparing for next year's crop by considering applying anhydrous ammonia fertilizer this fall.

John Sawyer, Iowa State University (ISU) Extension soil fertility specialist states: "I want to remind producers that they need to wait until the soil temperature has cooled to 50 degrees and is continuing to cool before applying this fertilizer".

Sawyer says that when anhydrous ammonia is applied to soils warmer than 50 degrees, a chemical process can quickly convert it into nitrate. The nitrate can then be leached from the soil, resulting in the movement from a producer's field into water resources, or it can be lost as nitrogen gas if soils become water-saturated.

"Waiting for cold soils does not guarantee that fall-applied N will be a successful application practice," said Sawyer. "Warm fall conditions might occur, or warm and wet conditions may occur the next spring and early summer. However, if one decides to make applications in the fall, then waiting until soils are cold is better than applying early." The same goes for inclusion of a nitrification inhibitor. It will work better after soils have cooled.

Soil temperatures can be found at: <http://extension.agron.iastate.edu/NPKnowledge/> *Soil Temperatures for Agriculture*. This shows the three-day, 4-inch depth soil temperature estimates for each Iowa county. You can access the average daily soil temperatures from yesterday, two days ago, and three days ago along with the six to ten day forecast. At the time this article was written, the average four inch soil temperature in Grundy County was in the mid fifties.

Elwynn Taylor, ISU Extension climatologist notes that during the past five years, the dates when soils cooled below 50 degrees F varied considerably, from late October to late November. “Don't get fooled by a temporary cold spell, especially if it occurs early in the fall. Also watch the six-to ten-day weather forecast, noting that a forecast for 'above' average temperature may signal soil warming,” said Taylor.

For additional information on 2005 crop season issues, contact the Grundy County Extension Office at 319-824-6979 or checkout the following web page: www.extension.iastate.edu/agenergy which offers farmers risk and energy management tools to help make decisions this harvest season.