

INSIDE GRUNDY COUNTY
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October 15, 2010

Fifty degrees; that is the key to maximizing the benefits from fall application of anhydrous ammonia or manure with high ammonium nitrogen content. Soil temperatures of fifty degrees or less and cooling are important to minimize nitrogen losses. With harvest progressing rapidly or in some cases almost done, it may be tempting to begin fall application of anhydrous ammonia before soils have cooled adequately.

John Sawyer, Iowa State University Extension soil fertility specialist reminds producers that “they need to wait until the soil temperature has cooled to fifty degrees and is continuing to cool before applying this fertilizer”. When anhydrous ammonia is applied to soils warmer than fifty 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 nitrogen 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, four 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 column was written, the average four inch soil temperature in Grundy County was fifty nine degrees. The soil temperature trend was cooling with a six to ten day forecast of normal temperatures.

According to Elwynn Taylor, Iowa State University Extension climatologist, the dates when soils cool below fifty degrees Fahrenheit can vary considerably; anywhere from late October to late November. He also notes that we should be careful and not get fooled by a temporary cold spell: “Watch the six to ten day weather forecast, noting that a forecast for 'above' average temperature may signal soil warming”.

For additional information, contact the Grundy office of ISU Extension at 319-824-6979.