PureGrade Liquid Plant Food

Correct Nitrogen Shortages Before Crop Need

by Dennis Zabel

Many areas of the country have experienced a long, wet fall and winter. These conditions can lead to nutrients like nitrogen and sulfur leaching below the root zone. Soil nitrate levels are expected to be low, especially where growers also had high crop yields last year that mined available N from the soil profile. Growers can take corrective measures with a variety of application methods before their crops experience nitrogen and/or sulfur deficiency this spring.

And, where fall N applications have been made, the nitrogen may have leached deeper in the soil profile, thus positioning it below the developing root system. Early N deficiencies may result. Nitrogen located deeper in the soil will likely be available later in the season as crop roots grow deeper into the soil and intercept the nitrogen.

Most starter fertilizer programs are not designed to provide all of the N that crops require after the first few weeks of growth. Some nitrogen from soil reserves or fertilizer applications is necessary in addition to that contained in the starter program. During years where significant N leaching has not taken place there is sufficient nitrogen throughout the soil profile to avoid early deficiencies.

There are a number of effective ways to add N to make it available to roots in the upper part of the soil profile. Most of the following application techniques are also appropriate for sulfur.

- Broadcast nitrogen/sulfur solutions with preplant herbicides. With rainfall, the nutrients will be in the top few inches of soil ready for absorption by the limited root systems of small plants. Part of or the entire N requirement can be applied at this time with the rest applied by side-dressing after planting. Apply at least 20-40% of the N preplant. Where there is significant residue cover, include an effective urease inhibitor to reduce N volatilization if substantial rainfall or irrigation is not expected within four days.
- Surface dribble band one of PureGrade's innovative fertilizer grades such as 14-10-4-2(S) where phosphorus, potassium and sulfur are desired in addition to the nitrogen. Apply 8-10 gallons/acre or more positioned 3-4 inches on one or both sides of the row.
- Dribble band UAN solution behind the planer unit at 10-20 gallons per acre 3-4 inches on one or both sides of the row.
- Use the planter's fertilizer disc openers to place nitrogen solution a few inches to the side and below the seed furrow.
- Apply nitrogen solution with the sprinkler irrigation system before or soon after planting.
- If time permits, knife-in either liquid N or anhydrous ammonia before planting. Ammonia applications should be made at least 2-3 weeks before planting to reduce potential germination damage.

Since nitrogen and sulfur are mobile they can quickly migrate into the root zone with rainfall or irrigation.

Growers may want to have a residue N test conducted on their fields to at least 3 feet in depth to show the depth and amount of residue nitrogen present. Adequate nitrogen can be applied to insure that nitrogen deficiencies will not occur.