Applying Additional Nitrogen After Wet Conditions

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Abstract
When conventional application equipment can be moved through the field (i.e., the soils are dry enough and the corn is short enough), then injection of anhydrous ammonia or UAN solutions would top the list of best options. Next would come urea-ammonium nitrate solution (UAN) surface dribbled between corn rows, and then broadcast urea. Broadcast UAN solution should be avoided on corn larger than the V7 growth stage.

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Applying Additional Nitrogen After Wet Conditions

by John Sawyer, Department of Agronomy

When conventional application equipment can be moved through the field (i.e., the soils are dry enough and the corn is short enough), then injection of anhydrous ammonia or UAN solutions would top the list of best options. Next would come urea-ammonium nitrate solution (UAN) surface dribbled between corn rows, and then broadcast urea. Broadcast UAN solution should be avoided on corn larger than the V7 growth stage. With tall corn, supplemental UAN will need to be applied with high-clearance equipment. Injection coulters or drop tubes between every other row or every row should work equally well. Urea can be broadcast with buggy or high clearance dry box spreaders if they can be driven between corn rows or aerially applied. For broadcast urea, use of a urease inhibitor can help slow volatile N loss from warm wet soils as they dry. A urease inhibitor would not be needed with injected UAN, and low probability of need with surface dribbled UAN due to limited UAN surface contact with soil. With broadcast urea, some material will fall into the plant whorls, but will cause only cosmetic damage to leaf tissue that will show as spots or streaks when the leaf grows out of the whorl. Of course to get benefit from surface applied N it needs to be moved into the root zone with rainfall.

John Sawyer is a professor of agronomy with research and extension responsibilities in soil fertility and nutrient management.

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