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Don't Let Rain Negatively Impact Your Yield

MORTON, Ill., June 1, 2015 — Corn is planted and the 2015 growing season is underway. As with any season, Mother Nature is already throwing many farmers a few curve balls. Throughout the last few weeks, many areas of the U.S. have experienced large rainfall events (up to 3 to 4 in.) and it's still early in the season. Rain is a blessing, but it can cause nitrogen deficiencies in the soil, robbing corn of yield potential.

"Farmers in many regions have seen heavy rain events the last few weeks, and large rain events are becoming more common," said Jim Schwartz, Regional Agronomy Manager, 360 Yield Center. "Farmers today are experiencing more 4 in. rainfall events during the growing season than ever before. In fact, in the upper Midwest there has been a 50 percent increase in heavy rainfall events in the last half century."

What's the big deal about rain?

Although rain is welcomed and necessary for a good corn crop, heavy rainfall events can negatively affect nitrogen levels in the soil through either denitrification or leaching.

Nitrate is mobile in the soil and will move with soil water. As a result, rain can cause leaching, or movement of nitrate down through the soil profile. Depending on soil type, structure, sub-horizons, soil moisture capacity and other factors, 1 in. of moisture can move 6 to 12 in. into the soil profile, or more. That movement could be even more dramatic with the recent 3 in. rainfall events happening in some areas this month. What's more, anhydrous is placed at least 6 in. deep in the soil. The converted nitrate, already half a foot under ground, with a 3 to 4 in. rainfall, begins to move further and further into the soil profile.

"Heavy rains move nitrates lower and lower. And, root systems at this point in the season are shallow and undeveloped," said Schwartz. "So, it can be assumed that much of the fall-applied N is out of reach of the early-season roots and will likely continue to move with additional moisture."

Another impact of heavy rainfall is denitrification. Denitrification is the conversion of nitrate into a gaseous form that is lost in the atmosphere. This type of N loss is common in heavy or poorly drained soil types because heavy rainfall causes waterlogged soils with a lack free oxygen. Organisms that break down residue require oxygen to survive. And, without oxygen in the soil, soil microbes rob oxygen from the nitrate molecules and convert it into a nitrogen gas, which is lost to the atmosphere.

Make sure your corn has the N it needs

Schwartz offers tips to better manage N throughout the season and ensure corn has the N it needs to finish the season strong and reach maximum yield potential.

1. Soil testing throughout the season can help farmers get a handle on how much N is left. 360 SOILSCAN™, an in-field soil nitrate testing system, can test how much N is in your field in real-time. To find out how much and where your N is, take a 12 in. core and split it at the 6 in. depth and test it with 360 SOILSCAN. That way, you'll know how much N is in your field and throughout the profile.
2. Continually monitor rainfall, especially heavy rainfall events. If they continue, be on alert and address N deficiency issues before they have a negative impact on your corn. You don't want corn to have a bad day.

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3. Don't wait until a nitrogen deficiency is visible in the corn plant. By then, you've likely lost yield potential. If you realize you have low nitrogen levels early enough, you can supplement your field with in-season N to help rectify the issue. Now, farmers don't have to worry about missing the window of application. The unique design of 360 Y-DROP™ allows for more flexibility in timing for late-season N application — so farmers can apply N when crops need it most, whether that's at V6 or all the way up to tassel.
4. Don't treat your entire field the same, because not every acre is the same. Rainfall impacts different yield management zones differently. For example, 3.5 in. of rain on a hill is different than 3.5 in. of rain in a valley. Nitrogen levels will likely vary across your field, especially after large rainfall events. 360 SOILSCAN allows you to test N levels throughout your fields to make smart N application decisions with variable rate prescriptions.

Visit www.360yieldcenter.com/Nitrogen to see how farmers can take control of nitrogen this season and adjust plans based on Mother Nature's curve balls.

About 360 Yield Center

Gregg Sauder and his team of farmers, agronomists and engineers at 360 Yield Center have a mission – for every farmer to reach the yield potential of modern seed corn. We are putting the farmer at the center of it all and taking a 360-degree view of key yield-limiting variables and how to course-correct for better results. 360 Yield Center gives farmers the power to sense, decide and apply what is needed for better-performing crops and better on-farm profits. That's where 360 SOILSCAN™, 360 COMMANDER™, 360 Y-DROP™ and 360 UNDERCOVER™ come in. To learn more, visit www.360yieldcenter.com, email info@360yieldcenter.com, call us at 888-512-4890 or contact your local 360 Yield Center dealer.

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