

DOS AND DON'TS OF FALL-APPLIED NITROGEN

SITUATION

Poor nitrogen (N) application methods or application timing could result in a shortage of available N to meet your corn crop's needs next season. Understanding proper N application methods can help maximize N efficiency on your operation.

FACTORS TO CONSIDER

- Soil type
- Soil temperature
- Type of nitrogen
- Nitrogen stabilizers
- Corn hybrid selection

ACTION PLAN

- 1. Determine Cation Exchange Capacity (CEC).** Soils with less than 12 CEC are more prone to leaching and are not capable of holding fall-applied nitrogen long enough to be useful next season.
- 2. Monitor soil temperature.** Check soil temperature at a 4-inch depth during the heat of the day for a few days to see if the temperature is below 50 degrees Fahrenheit and trending downward. *Nitrosomonas* bacteria, which start the conversion process of stable N (NH_4) to less stable N (NO_2 and NO_3), become inactive around 40 degrees Fahrenheit.
- 3. Select nitrogen type.** Anhydrous ammonia is a preferred source of commercial N for fall applications because it is a concentrated source of ammonium nitrogen. Ammonium nitrogen carries a positive charge, which keeps the N in the soil by attaching to negatively charged clay and organic matter in the soil. Anhydrous ammonia also needs to be incorporated, ensuring the nitrogen is deep enough in the soil to avoid being impacted negatively by occasional warm temperatures in the winter. Other 100 percent ammonium N products like ammonium sulfate or urea could work, too, if they were deep-banded.
- 4. Apply a nitrogen stabilizer.** Nitrapyrin, found in **N-Serve® nitrogen stabilizer**, helps keep fall-applied N in the soil. Other stabilizers protect against surface volatility, but don't prevent *Nitrosomonas* bacteria from converting ammonia to nitrate N, which can be lost to leaching. Only N-Serve can provide long enough control to keep nitrogen in the soil in the corn root zone until the following growing season. N-Serve is the only nitrogen stabilizer labeled for use with anhydrous ammonia.
- 5. Choose hybrids capable of using N early.** Hybrids with fixed or semi-flex ear types use a majority of N early in their production. Ask your Mycogen Seeds sales representative which hybrids work best for your soils and environment.

SUMMARY

To maximize efficiency of fall-applied nitrogen on your operation, ensure soils are capable to hold it and soil temperatures are below 60 degrees Fahrenheit and falling. Incorporate 100 percent ammonium nitrogen products into the soil, apply with N-Serve and plant hybrids that match your nitrogen program. For more information, contact your local Mycogen Seeds customer agronomist or trusted agronomic adviser.



Anhydrous ammonia is a preferred source of commercial N for fall applications.

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