KANSAS STATE UNIVERSITY | Extension
Meadowlark District

October 30, 2026

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Nitrogen Losses

Most of our crops require Nitrogen (N) in some form. Some (legumes) produce their own. Some use it more efficiently than others (native grasses don't respond nearly as well to N as do brome/fescue). For those requiring N sometimes at high levels), managing to make applications as efficient (and economical) as possible are important.

Increasing efficiency starts with a knowledge of where nitrogen might be 'lost' in our application systems. Examples include:

- Runoff – movement of N off the surface in soil or water
- Leaching – downward movement of N in the nitrate form
- Denitrification – gaseous loss of N from nitrate
- Volatilization – gaseous loss of ammonia from surface applied urea
- Immobilization – utilization of N by biomass

All have different management factors affecting loss levels. Most involve water or are impacted by soil properties and temperature since microbial processes are at the center of why losses may or may not occur. For example, leaching tends to be worse in sandy, highly permeable soils while denitrification is a problem in heavier soil types. Volatilization is an issue with urea but isn't a concern with ammonium nitrate.

In an ideal world, we'd eliminate N losses altogether – but that's impossible, so we control the things we can to reduce losses as well as we can. We'll touch on a few options in the coming weeks, but one good starter idea to keep in mind is the 4Rs of Nutrient Stewardship: Right Source + Right Time + Right Rate + Right Place. Whether you're thinking about fall anhydrous applications or fertilizer on brome next spring, evaluating applications through the lens of these 4R principles can be a great start towards reaching those efficiency goals. Learn more about them at: https://4rplus.org/nutrient-management/ .

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Utilizing High Nitrate Forages

A couple of articles ago we looked at testing for nitrates and prussic acid in forage as the growing season ends. There have been forage nitrate tests rolling through the office and fortunately most have been of no concern, but what if they do come back with higher levels? Let's look at what management strategies might be. If help is needed in developing a high nitrate forage plan, reach out to your Extension agent for help. The K-State publication MF 3029 – Nitrate Toxicity is a good resource.

Nitrate toxicity is a misnomer because nitrite (NO_2), not nitrate (NO_3), is what is toxic to animals. Rumen bacteria rapidly reduce nitrates in the forage to nitrites. Normally, the nitrites are converted to ammonia and used by rumen micro-organisms as a nitrogen source. But, if nitrite intake is faster than its breakdown to ammonia, nitrites will begin to accumulate in the rumen. Nitrite is rapidly absorbed into the blood system where it converts hemoglobin to methemoglobin. Red blood cells containing methemoglobin cannot transport oxygen, and the animal dies from asphyxiation.

Depending on what research is referenced, nitrate recommendations are generally considered low risk at 3000 ppm or lower. The level of nitrate tolerance by the animals is very dependent on the situation. Nitrates in the 3000-6000 ppm range can be utilized with caution at less than fifty percent of the ration, 6000-9000 ppm utilized with extreme caution and over 9000 ppm is considered dangerous.

Grazing is one utilization method and often where the most concern arises. If the forage to be grazed is high moisture it is often lower risk, as fresh forages release nitrates into the rumen at a slower rate than dry/mature forages. Keep in mind these management tips for using higher nitrate forages. Adapt animals slowly to the forage and allow selective grazing. Fill the rumen prior to turning out with dry hay or other harvested forage. Higher dietary energy increases the rate of detoxification, so feeding a small amount of corn while grazing has been shown to have positive effects. Ultimately, the decision to graze high nitrate fields is a judgement call and a question of how risk adverse the manager is.

Harvesting and storing forages is the other option. While the window is narrowing this fall, when done right, ensiling high nitrate forages can decrease the nitrate content of the forage by roughly half. A twenty-one-day fermentation process has been found to be the minimum to most effectively reduce nitrates. Conversely, the drying process for hay does not decrease nitrates, so high nitrate hay needs to be diluted with other forages low in nitrates. Grinding and blending low and high nitrates hay is the best risk reducing method. If grinding is not an option, start feeding low nitrate hay first, working up to higher levels mentioned above, as animals can build tolerance over time. The same rules on consumption and rumen fill discussed with grazing apply in feeding harvest forages as well.

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Laura Phillips
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What to do with pumpkins after Halloween

Many of us enjoy carving pumpkins for Halloween décor. But after Halloween is over, what do you do with the pumpkin? Many people throw them in the garbage, and an estimated 1 billion pounds of pumpkins end up in landfills each year.

Not only does 1 billion pounds of pumpkin take up valuable space in landfills, but it can actually harm the environment. When compostable items like pumpkins are put into landfills, they decompose differently than they would in a compost pile. In landfills, the waste is sealed underground with limited oxygen. So, the microorganisms that break down the pumpkins and other organic material have to do so in an anerobic environment (without oxygen). This means that the decomposition process will create methane, a potent greenhouse gas that contributes to climate change. With how many pumpkins are thrown away, we can expect over 80 million pounds of methane gas to be released into our atmosphere.

You can help prevent the buildup of methane gas by forgoing the landfill and allowing it to decompose naturally. Before composting a pumpkin, be sure to remove all decorations and lights that are not compostable. If you have a garden, you can chop up the pumpkin and mix it into your garden's soil. You can also add the entire pumpkin to a compost pile if you have access to one. A decomposing pumpkin can add nitrogen, phosphorus, and potassium, all essential nutrients for plants to your soil.

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Final Weeks of Medicare Open Enrollment: What Beneficiaries Should Review

The Medicare Open Enrollment Period is underway and continues through December 7, 2026. During this time, Medicare beneficiaries have the opportunity to review and make changes to their Medicare Part D (prescription drug) or Medicare Advantage (Part C) plans. Any changes made during Open Enrollment will take effect on January 1, 2027.

Many people believe that if they are satisfied with their current plan, there is no need to shop around. However, Medicare plans almost always change from year to year. Monthly premiums, pharmacy networks, copayments, and covered medications can all change. As a result, another plan may better meet your needs or help you save money.

One of the most important reasons to review your coverage each year is to make sure your medications will still be covered. Just because a drug is covered this year does not mean it will be covered next year. Discovering that a medication is no longer covered when you arrive at the pharmacy can be frustrating and costly.

Pharmacy networks can change as well. A pharmacy that was a preferred provider this year may not be preferred next year, and some pharmacies may leave a plan's network altogether. Reviewing your pharmacy options could result in lower out-of-pocket costs.

If you are enrolled in a Medicare Advantage plan, carefully review the plan's network of healthcare providers. Confirm that your primary care provider, specialists, hospitals, and other healthcare providers will continue to be in network for the coming year. Receiving care from an out-of-network provider can significantly increase your healthcare costs.

If you are struggling to afford your medications or other Medicare-related expenses, financial assistance programs may be available. Programs such as Extra Help and the Medicare Savings Program can help eligible individuals lower their healthcare costs. Many Kansans are surprised to learn they qualify for assistance.

If you need help navigating the Medicare maze, contact K-State Extension's Meadowlark District to speak with a trained Medicare counselor. Remember, December 7 is the deadline to make changes to your Medicare Advantage or Medicare prescription drug plan for the upcoming year.

For assistance, call 785-364-4125.

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No news article this week.