K-STATE Research and Extension | Meadowlark District

October 24, 2025

David Hallauer
District Extension Agent, Crops & Soils

Fall Anhydrous Tips

The fertilizer price outlook and grain price outlook aren't currently a complementary relationship equaling good profits. With fall anhydrous applications approaching, maximizing the return on that portion of our nitrogen dollar is important.

A good first step is to understand the reactionary properties of anhydrous in the soil. The ammonia form we inject reacts quickly with soil moisture and is converted to a nitrogen form that binds to clay and organic matter in soil. It's typically a fairly stable form and doesn't move much in the soil profile unless applied in more sandy soils, making fall applications a possibility.

The process doesn't take much moisture, but if soils do get dry, we have to be a little more careful. Whether applying in dry soils or soils with adequate moisture, make sure to apply at an appropriate injection depth so gas is in contact with as much soil as possible, helping to reduce ammonia losses back to the surface. If application equipment causes cloddiness or large air pockets in the soil, it's best to wait. On the flip side, applying under wet conditions may cause the knife track to smear resulting in ammonia loss due to inadequate closure of the knife track. If you can smell anhydrous at the surface, you are likely losing product. How much is difficult to quantify without specialized equipment, but any loss is a concern.

Temperature is third key to keeping the product in a stable form. Higher temperatures equal faster conversions to a nitrogen form more favorable to loss. Lower temperatures keep anhydrous in a form that can remain stable for two to three months (it's why we shoot for soil temperatures below 50 degrees at a four-inch depth. The conversion process from a stable form to a less stable form doesn't *stop* below 50 degrees, but colder soil *does* limit the process, keeping conversion to form susceptible to loss to a minimum. If you're planning to run at the higher end of these temperatures or are concerned about warm stretches in the winter causing conversion to more loss prone forms, you might explore the use of a nitrification inhibitor.

There are lots of reasons to apply N as anhydrous in the fall just as there are also lots of reasons to maximize nitrogen use efficiency with tighter margins ahead. Understanding how anhydrous ammonia works can help you make small decisions now that might make big differences later.

As you make decisions about when to start applications, consider the soil moisture and soil temperature resources available via the Kansas Mesonet. Check out the temperature page at https://mesonet.k-state.edu/agriculture/soiltemp/ . With three stations now providing coverage in the Meadowlark Extension District, it provides a great resource about how these factors are trending. For example, while soil temperatures are trending downwards (a good sign) at all three sights, they aren't low enough to warrant considering applications just yet.

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Ross Mosteller
District Extension Agent, Livestock & Natural Resources

Genomic Testing for Heifer Selection

Media is abuzz with proposed actions of the current administration in relation to cattle production, in particular beef supplies and heifer retention incentivization. I'm a free-market supporter but I will not get into politics in this space! What is as important, maybe much as now as ever, is working to develop the best possible replacement heifer for the next generation of the nation's cowherd. Having recently collected DNA from my own replacement heifer pool, genomic testing is a topic front of mind.

As the spring born calf crop arrives in weaning lots, one big decision that needs to be made is which heifers are destined for a replacement pen, and which will be moved into the feeding sector. Heifer retention is big decision producers are faced with as they work to maintain and build the breeding herd. Lots of factors go into this decision including pedigree, performance, phenotypic traits, genotypic merit, feed resources, net present value, development cost, to name a few.

All these factors at play, there is still no great way to know how the weaned heifer calf might perform with her first calf. Heifer development is a long-term investment, so it only makes sense to invest in those individuals who genetically have a favorable predisposition to having the traits desired in a productive cow. One tool that can help investigate this potential is genomic testing. Like any tool, it is not a complete answer but can help with making a clearer selection decision.

Genomic testing is conducted on a small ear tissue, hair follicle or blood sample. The DNA held within this sample is compared to proven genetics and can provide more accuracy to predicted progeny data. This testing can be conducted at any point in the animal's life. Results from the genomic test can provide producers with data-driven markers of genetic potential in several production factors. There are numerous companies offering genomic testing, with various testing options available.

A common question is whether genomic testing is a better predictor than EPD's. Depending on who you talk to, you might get a different answer! One benefit of genomic testing is the replacement of multiple progeny tests, based on the use of gene markers that are compared to animals within very large databases. Additionally, labs are offering tests for commercial cattle selection, extending the technology to more producers in the beef industry. While thousands of markers are typically tested, it is still only a snapshot of the complete genetic package found within the DNA.

Another important question is what is the cost, and will I get a return on investment? The cost of genomic testing can range from tens of dollars to hundreds, depending on how detailed the test are. Genomically testing the entire heifer crop can be an expensive investment but can pay dividends when selecting genetically superior heifers that produce higher quality calves. Keeping a low performing heifer can end up costing the operation more in the long run due to lower performance.

Operations that develop replacements may want to consider investment in this technology. Cost savings from selling low performing heifers and keeping the ones that will have potential to produce a higher value calf will pay for testing. This is a one-time cost that will provide the information needed to make informed keep/cull decisions. By testing and keeping replacement heifers, eventually the entire herd will be genomically tested which should move the needle on genetic progress.

Just like each of the other tools found in the beef producers' toolbox, cost of tools need to be evaluated and the total picture looked at. K-State's AgManager website has some great tools to look at the cost of putting heifers into the herd. Visit the following website and look for the *"KSU Beef Replacement"* spreadsheet tool. https://agmanager.info/livestock-meat/production-economics

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Laura Phillips
District Extension Agent, Horticulture

No news article this week.

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Teresa Hatfield
District Extension Agent, Family and Community Wellness

Flu Prevention: What You Need to Know

A few years ago, during the Christmas holiday, my sister and her family had to stay at home with a sick child who had the flu. It was a disappointment to my mom and the rest of the family, as she and her family live a few hours away. The following year, my sister made sure to get the kids vaccinated; they didn't want to miss out on the family gathering.

As we head toward cooler weather and fall settles in, so does the annual flu season. It is important that you take steps now to protect yourself and your family from the flu.

The Centers for Disease Control and Prevention (CDC) recommends that everyone older than 6 months be vaccinated against the flu. The flu vaccination can help keep you and your family healthy.

While Flu vaccines may not completely prevent you from becoming sick, they can reduce the severity of illness, complications, and hospitalizations. Vaccines are particularly important for older adults 65+, pregnant and postpartum individuals, and people with chronic conditions like asthma, diabetes, heart disease, and weakened immune systems.

Flu season usually peaks between December and February. Immunity from the vaccination usually kicks in two weeks after vaccination. So now is the time to get your shot if you haven't already done so. Flu shots are available at pharmacies and local health departments. Most insurance will cover the cost of the shot.

You should take additional steps to prevent the flu.

- Make sure to wash your hands frequently with soap and warm water.
- Cover your cough and sneezes with a tissue or elbow.
- Don't go out and about if you are sick; try to keep your germs to yourself.
- Clean and disinfect high-touch surfaces regularly.

If you do get sick, contact your healthcare provider; they may be able to prescribe an antiviral medication to help shorten the duration of your illness.

Don't get caught off guard this flu season. Get vaccinated and practice good hygiene.

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Cindy Williams
District Extension Agent, Food, Nutrition, Health and Safety

Cleaning and Storing Canners

As canning season winds down, it's time to clean and store the equipment for next year. Here are some tips for pressure canners:

- Clean the vent and safety valve with a pipe cleaner or small piece of cloth.
- Check the gasket for cracks and food debris.
- If the inside of the canner has darkened, fill it above the darkened line with a mixture of 1 Tablespoon cream of tarter to each quart of water. Place the canner on the stove, heat water to a boil, and boil covered until the dark deposits disappear. Sometimes stubborn deposits may require the addition of more cream of tartar. Empty the canner and wash it with hot soapy water, rinse and dry.