K-STATE Research and Extension | Meadowlark District

October 31, 2025

David Hallauer
District Extension Agent, Crops & Soils

Technology, Fall Armyworms, Lease Agreements, Oh my…

Part of the fun of working in agriculture is the opportunity for something new and different every day. Part of the *challenge* of working in agriculture is the same. When new and different is an opportunity – can you take advantage of it? When it's a challenge – do you have the resources to manage for it? Three upcoming meetings will hopefully help you do both.

Like technology or not, it's here. Fortunately, you can kind of pick and choose what you want to use with varying 'degrees' to choose from. The Meadowlark Extension District and Jackson County Conservation District are offering a look at just a few of these tools for livestock and forage growers at *Technology in Agriculture* on Wednesday, November 12th at the Evangel Church in Holton. We'll pack the morning with conversations covering a handful of tools ranging from the WebSoil Survey and other forage monitoring tools (simple) to more in-depth tech like electronic fence (with K-State Extension Beef Specialist Dr. Jaymelynn Farney). It won't be an exhaustive list of all the livestock tech on the market, but if taking a deeper dive into managing livestock or forages is on your mind, this event might be for you.

Speaking of forages, how are stands looking following this season's fall armyworm invasion? While some have improved, others are facing longer term challenges. Recovery – or the lack thereof – will be the focus of three *Fall Armyworm Recovery* meetings Wednesday November 19th (Holton), Thursday November 20th (Oskaloosa), and Friday November 21st (Seneca). We'll take a look back at what we learned this season then a deeper dive into what may be ahead, including options for weed control, fertility management, and even a change in forages. All meetings will kick off at 10:15 and wrap up with a light lunch around noon.

If the end of the growing season brings your farm's lease arrangements to mind, consider attending this year's *Rental Resources Roundtable*. These roundtables are a rapid fire look at the resources available to landlords *and* tenants on K-State's AgManager and other websites as you renew – or redo – rental agreements. From lease survey data to contracts to Excel tools to help you evaluate agreements, we'll provide an overview of the many available resources for your farm. Meetings will start after lunch (noon) at 12:45 following the Fall Armyworm Recovery Meetings in Holton, Oskaloosa, and Seneca on November 19, 20, and 21 respectively.

RSVP for the Technology in Agriculture by November 5th to the Jackson County Conservation District (brian.boeckman@ks.nacd.net) or by contacting any District Office. RSVP for the Fall Armyworm Recovery and Rental Resources Roundtables by Tuesday, November 18th to a District Office or via e-mail to me at dhallaue@ksu.edu or Ross Mosteller @ rmostell@ksu.edu . Attend one - or both - and have lunch with us while you're there. More information (agendas, RSVP information, etc…) are available on the Events page at https://www.meadowlark.k-state.edu/events/ or by contacting any District Office.

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Ross Mosteller
District Extension Agent, Livestock & Natural Resources

Avoiding Prussic Acid Poisoning While Grazing

Writing this article on Halloween, there is no doubt to be some scary ghosts and goblins going door to door tonight looking for treats. While this is a fun tradition for many families, what truly can be scary at this time of year is Prussic Acid Poisoning in grazing livestock. Having experienced frosty mornings and the pending hard freezes, this is a question that has been a popular one in the office. Two University of Nebraska Specialist composed a good article on this topic, discussing the quick testing method, so credit goes to Mary Drewnoski and Daren Redfearn for the base of this article this week.

Annual forages like sorghum, sorghum x -sudangrass, and sudangrass can accumulate nitrates, which should be evaluated before grazing. However, another potential risk is prussic acid poisoning (hydrogen cyanide), which can be lethal if ingested. Forage sorghum and grain sorghum (milo) pose the greatest risk, with sorghum x -sudangrass having a reduced risk, but still a concern. Other plants in the sorghum family like Johnsongrass can pose a problem and not be thought about. Volunteer corn is another common question but is considered low risk and nitrates are often more a concern.

Prussic acid poisoning can occur in certain scenarios, such as new growth or following a frost. If these plants are fertilized with high rates of nitrogen fertilizers, the risk of prussic acid increases further. Shoots shorter than 15 to 18 inches are especially dangerous, particularly for the sorghums. To minimize risk, wait until sorghum and sorghum x sudangrass plants are at least 24 inches tall and sudangrass is at least 18 inches tall before grazing. If you have regrowth in late summer that does not meet these plant height thresholds, you can either wait seven days after a killing frost before grazing or test the plants to assess prussic acid levels.

Frost poses a significant risk because prussic acid forms in plants when cell membranes are damaged by freezing. This allows chemicals within the plant cells to combine and produce cyanide. After seven days, any cyanide generally dissipates into the air. However, each freeze that does not completely terminate plant growth results in an additional seven-day countdown. A killing frost is typically considered to be around 24°F. However, dense stands may require a longer, sustained cold period to achieve a full termination of growth.

To mitigate this risk, one strategy is to pull livestock off pastures when frost is forecast and then wait seven days after a killing frost before grazing. However, the period between the first frost and a killing frost can sometimes be prolonged, with frost-free intervals where grazing might seem feasible. During these windows, testing the forage for cyanide can provide valuable information, helping producers determine if it is possible to safely graze before the final killing frost occurs.

Producers looking to assess risk in situations where plant growth is borderline or to confirm safety after a killing frost can perform a simple in-field test for prussic acid. This test screens for the presence of cyanide but does not provide exact concentration. It can, however, give an indication of potential risk. Meadowlark District has purchased some “ready to use” field kits from Ward Labs to offer a testing to our patrons for results in 20 minutes or so.

K-State has a good publication on this topic titled “Prussic Acid Poisoning” MF3040 that serves as an excellent resource on this topic. Bottomline: Prussic Acid Poisoning can be a quick and deadly issue in sorghum species, particularly around times of stress like rapid plant growth, drought or most timely now – frost and killing freezes. Delaying grazing 7-10 days after a killing frost is recommended practice, but testing is available. Additionally, don’t forget that nitrates can be a companion issue that will not dissipate after a killing frost. “Nitrate Toxicity” MF3029 is the resource on this topic

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Laura Phillips
District Extension Agent, Horticulture

Protecting young trees in the winter

If you planted trees, shrubs, or other perennials this past year, you might be wondering: how do I help them through the winter? Young trees do face extra challenges, but you can take steps to help them survive and thrive into the spring.

The first thing to consider is water. All perennials can undergo drought stress in the winter if their roots get dehydrated. With younger trees, the roots are less expansive, making it easier for them to dry out. To combat this, check on any trees and shrubs planted less than 3 years ago twice a month to see if their soil is dry. You can use a rod or stick to see how moist the soil is a few inches under the surface. If the soil is dry, you can use a 5-gallon bucket with a 1/8-inch hole drilled near the bottom to let water slowly and deeply irrigate the soil.

To help the soil retain the moisture it receives, ensure there is a healthy layer of mulch around your young plants. You may have already mulched at the time of planting, but between wind, critters, and decomposition, it is a good idea to double check there is sufficient mulch for the winter. Ideally, you should have 3-inch layer of mulch extending at least 2 or 3 feet from the base. Make sure that the mulch is not touching or piled up around the trunk, as that can trap moisture against the bark and cause rot. Instead, create a donut shape with the mulch around the tree.

Mulching will also help prevent another issue: cold damage to roots. Overall, roots are not as cold hardy as stems and branches. Normally, soil provides insulation to keep roots warm. Around newly planted trees and shrubs, the soil is likely to have cracks or empty space from moving soil around. These cracks let cold air penetrate the soil and reach the roots. Mulch adds another layer of insulation to keep roots warm. The insulation from mulch also helps prevent the freeze-thaw cycle from causing soil to expand and contract around the roots, which can dislodge the plant or damage the roots.

You may also find that rabbits, voles, or other critters enjoy the taste of young, thin bark when looking for a winter snack. One of the best strategies to prevent animal damage is to discourage them from visiting. Mow the grass to 2 inches and remove any yard waste build up from the area to prevent small critters from finding a cozy home next to your tree or shrub.

The second thing you can do is to make a physical barrier that prevents wildlife from reaching your tree. The type of barrier you need depends on what kind of wildlife are trying to snack on your plants. Make sure that whatever barrier you build lets the trunk or stem remain exposed to the air. Piling up materials against the base of the trunk will do more harm than good.

In addition to hungry animals, sunscald can cause severe bark damage, especially on species with thin bark such as honeylocust, fruit trees, ash, oaks, maples, lindens, and willows. When the sun heats up the thin bark it can trick the tree into thinking that it's time to wake up from dormancy. The cells in the trunk then start to become active, resulting in less cold hardiness. When night falls and temperatures drop, the tree is not as prepared to handle it, causing frost damage, or sunscald. The affected bark will later crack and peel off, leaving your young tree with a wound that is open to infection.

To prevent sunscald, wrap the tree trunk in a light-colored plastic or paper from the ground to below the first branches. The light color will reflect light and reduce how hot the bark gets. Never use a brown or dark colored material, as that will absorb light and make the bark hotter. Generally, wrapping trees for their first winter is sufficient. For thin-bark trees, you may want to wrap them for winter as well. Make sure to check the wrapping before the second winter arrives to ensure it is not too tight or deteriorated.

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Teresa Hatfield

District Extension Agent, Family and Community Wellness

No news article this week

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

Investing in a Cooking Thermometer

There are a variety of thermometers to use for cooking. And they are not just for checking meat doneness. They can be used to check temperature of baked goods, stages of candy cooking, and more. They can also help with making good quality food.

There are choices. Here are a few:

- Dial Oven-safe. It can be left in the food while cooking large foods like whole poultry and roasts. Place in the thickest part of the food.
- Digital Instant-Read. Good for thin foods and gives quick results. Insert at least ½-inch deep into the food. Not oven safe.
- Dial Instant-Read. Good for larger foods and soups. Reads in about 15-20 seconds. Place 2-2 1/2" deep into thickest part of the food. Insert Sideways into thinner foods. Not oven safe.
- Pop-up. These are in whole turkeys or chickens. They are made of food safe nylon and are reliable within 1-2°F. Always double check doneness With a conventional thermometer in the innermost part of the thigh and thickest part of the breast.
- Digital Oven Probe with Cord. These can be used in most foods and is oven safe. The base unit sits on the stovetop or counter.