K-STATE Research and Extension | Meadowlark District

March 27, 2026

David Hallauer
District Extension Agent, Crops & Soils

Field Scouting for Resistance Management

In last week's column about the Crop Protection Network's *Corn Fungicide ROI Calculator*, I wrote: 'scouting is *not* a part of the crop management equation to eliminate'. It was made in reference to corn disease management, but it could just as easily apply more broadly to resistance management across all crops.

For almost 50 years we've dealt with herbicide resistance of some type in Kansas – and monitoring continues. In fact, we've screened weed populations in the District for resistance over the last two seasons (results pending…) as other states have documented resistance to products that are kind of our 'last line of defense' against some troublesome weeds.

A survey of soybean fungicide product resistance in Kansas was conducted a few years ago by K-State Extension Row Crops Pathologist Dr. Rodrigo Onofre with plant pathologists across the Midwest looking at issues with Frogeye Leaf Spot. Sure enough…they found some level of fungicide resistance in samples from every county sampled (six), including four in NEK.

While insecticide resistance is less documented than herbicide resistance, it could certainly become a problem as well. Take last season for example. Many alfalfa stands were sprayed at least once – and some twice – for alfalfa weevil in early spring then might have received at least one more application of an insecticide in late summer/early fall for fall armyworms. That's not only an application every season, but sometimes more than one (or three…) in a season, increasing the opportunity to introduce resistance and putting increased pressure on products that might be working for us.

What does that have to do with scouting? Knowing *why* you're making an application is not only an economic decision but a resistance management one as well with scouting providing affirmation of what you have in the field. It might result in spraying earlier than planned to catch a pest or weed when small and more easily controlled – reducing resistance. It might result in no application at all if no pest is present, reducing unneeded product exposures that could potentially induce resistance as well.

Scouting is equally important post application to see how products perform as well. After an appropriate time (adhering to label directions…), return to fields to see how products performed. If something didn't work, start to investigate why. It might be one of the best visits you make into the field because it can prevent issues for years down the road.

There's a lot on your plate through the growing season but weaving in field scouting *is* important. A little time in-season just might help you kick product resistance down the road a little farther – and that's a *good* thing.

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Ross Mosteller
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Ionophores to Manage Coccidiosis

What a ride this weather roller coaster has been lately! Huge temperature swings can have a major impact on the health of livestock exposed to the swings. Watching my calves, we've gone from nearly frozen ears to panting in record heat within the same week! There are many challenges to livestock outside of weather extremes, coccidiosis can be one of those that rears its ugly head. Fortunately, there is a tool for the cattle producer that can help manage coccidiosis and bring additional performance too. What am I'm talking about? Ionophores. Let's take a look at this interaction today.

Likely the place to start in this discussion is, what is coccidiosis? Coccidiosis is an illness caused by protozoan parasites. Infections in cattle cause intestinal disease with signs of diarrhea (with or without the presence of blood), decreased appetite, and mild depression. Severe infections can lead to extreme weight loss, pale mucous membranes, and straining. Typically, these infections occur between 1 to 2 months of age, but it is possible to see infections in older cattle, particularly in the early feeding period. Protozoan oocysts are found in the environment, so it can be an ongoing challenge.

The next logical point in discussion then becomes, what is an ionophore? Ionophores are feed additives commonly used in cattle diets to increase feed efficiency and growth. Monensin (Rumensin), lasolocid (Bovatec), and laidlomycin propionate (Cattlyst) are ionophores that are on the market. These feed additives are classified as nontherapeutic antibiotics, not requiring a VFD. Ionophores work by shifting the populations of bacteria within the rumen from lactic and acetic acid producing colonies to propionic acid producing colonies. This improves the overall efficiency of the rumen. Ionophores can reduce occurrences of bloat and acidosis. Additionally, some ionophores aid in the control of coccidiosis.

Ionophores can be utilized to control coccidiosis in young calves until their natural immunity builds up to fight off infections. These additives work by killing coccidia at a specific stage of growth by changing the environment of the gut, leading to the death of these protozoa parasites. In mature cattle, feeding ionophores may reduce the number of coccidia shed through the animal's feces. This in turn may help reduce the number of coccidia oocysts spread into the calf's environment.

Most mature cows have low levels of coccidia oocysts in their digestive tracts that they shed into the environment through their manure. Even though the cows remain unaffected, they are unknowingly exposing their calves to this parasite. While the calves themselves are not ingesting the ionophore, lowering the levels of coccidia oocysts within the calf's environment limits exposure. Ionophores can safely be supplied to pregnant mature cows at least 30 days before calving through a total mixed ration to get a constant level of intake. If cows were consistently fed an ionophore for a 30-day minimum and are moved to a clean calving area, they will shed fewer oocysts in manure. Ionophore supplementation should be continued through the calving period. At this time, Monensin is the only ionophore approved for use in mature, reproducing beef cows.

Ionophores should not be the only approach in controlling coccidia populations. Environmental and cattle management are just as important in managing coccidiosis. Coccidia oocysts can survive for months in manure and environment. Proper pen management is paramount in limiting the number of oocysts that calves can encounter. This includes scraping pens of used bedding and cleaning waterers to prevent fecal contamination. Ideally, calves should be born on different soil from overwintering sites.

To summarize, ionophores are not the total fix for coccidiosis in young calves. When adding any feed additive to cattle rations, consult with a nutritionist and veterinarian to determine the best application for your situation. This ensures that all label directions are followed and utilizing the best additive for the issue at hand. To learn more about Coccidiosis visit the K-State Bookstore and look for the publication MF2209 Coccidiosis.

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Laura Phillips
District Extension Agent, Horticulture

Ticks and Tick-Borne Illness in Kansas

With our recent warm weather, you may notice that ticks are out and about. Ticks are small, slow moving wingless parasites that feed on human and animal blood. Ticks can be classified into two groups: soft ticks (Argasidae) and hard ticks (Ixodidae). Generally, the ticks that target humans and dogs are hard ticks. Hard ticks have a hardened shell, and the head sticks out in front of the body.

Ticks cannot jump, drop from trees, or move very quickly. Most of the time, ticks land on animals using the ambush technique. They crawl onto grass, branches, and other plants, usually within a few feet of the ground, and wait for a good host. When a person or animal brushes against the vegetation, they crawl onto them and find a spot to feed.

In Kansas, humans usually encounter the lone star tick, American dog tick, brown dog tick, and the deer tick, or blacklegged tick. Female lone star ticks have a single white spot on their back, while male lone star ticks have a few white or yellow lines on the edges of their back. American dog ticks have a white to tan mottled color on their backs. Brown dog ticks are reddish brown and have no markings on their backs. They prefer to feed on dogs but will bite humans if no dogs are available to them. Adult female deer ticks have a two-toned back. Near the head of the female deer tick is a dark brown to black semi-circle, and the rest of the back is orange-brown. The back of a male deer tick is nearly all black.

In Kansas we see a few different types of tick-borne diseases. Different ticks can transmit different diseases, so it is important to know what type of tick bit you. This will make diagnosis easier if you become sick from a tick bite.

The lone-star tick can transmit Ehrlichiosis, Rocky Mountain Spotted Fever and other Spotted Fever Group Rickettsioses (SFGR), and Tularemia. The American dog tick can transmit Rocky Mountain Spotted Fever and Tularemia. The deer tick can carry Lyme disease. Tularemia and Lyme disease usually requires the tick to be attached for over 24 hours, while Ehrlichiosis and Rocky Mountain Spotted Fever, can be transmitted within a few hours.

Lone-star ticks can also cause a condition called Alpha-gal syndrome, also known as red meat allergy. This condition causes a person to develop allergies (often hives or nasal congestion) after consuming red meat. It is not yet clear how long a tick must be attached before it can cause Alpha-gal syndrome.

While tick bites often seem like a fact of life in Kansas, there are several steps you can take to prevent tick born illnesses. First is to stick to trails instead of going into tall grass or weeds. Using insect repellents with DEET or permethrin works well to discourage ticks, although permethrin can only be applied to clothing, not to skin. Light colored clothing makes it easier to spot ticks before they reach the skin.

If you have been hiking or out in tall grass, it is a good idea to check for ticks, shower, wash and dry your clothes as soon as you can. While a washing machine might not kill a tick, the heat of a dryer will kill any ticks. If you are bitten by a tick, promptly remove it to reduce chance of disease transmission. It is best to use fine point tweezers to remove the tick. If you pull it off with your fingers, you may squeeze the tick, causing it to release more saliva into your bloodstream and put you at higher risk of a tick-borne illness. Save the tick in a vial with rubbing alcohol so it can be identified if you become ill after the bite. Be sure to monitor tick bites for discoloration, swelling, or rash. Should you notice any issues with the bite or develop any flu-like symptoms see a physician and have the tick identified.

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Teresa Hatfield
District Extension Agent, Family and Community Wellness

Empowering Family Caregivers

Across Kansas and within our homes, family caregivers provide essential care and support to parents, spouses, friends, and neighbors. Nearly 30 percent of adults over the age of 18 provide unpaid care for individuals with chronic medical conditions or disabilities. More than one-third of these caregivers are also raising children at home while balancing full-time employment—a group often referred to as the *sandwich generation*. Not surprisingly, caregivers frequently report high levels of stress and are more likely to experience anxiety, depression, and their own health challenges.

The impact of family caregivers on our local communities is immense. Unpaid caregivers contribute billions of dollars' worth of care and services each year—support that would otherwise need to be provided by the healthcare system. Family caregivers assist with activities of daily living such as dressing, bathing, feeding, toileting, and mobility. They also provide transportation, shopping, housekeeping, meal preparation, medication management, and coordination of healthcare appointments. With so many responsibilities, it is no wonder caregivers often feel exhausted, overworked, and overwhelmed.

Although many caregivers report a sense of satisfaction and purpose in their role, the emotional demands can be significant. Common feelings include guilt, grief, frustration, resentment, and fatigue, all of which can become overwhelming overtime. Finding opportunities for self-care is often challenging, yet it is essential. Access to education and reliable information can empower caregivers, helping them feel more confident and better equipped to manage stress. The more caregivers learn about their role, the more empowered and supported they can become.

To support family caregivers in our community, the Alzheimer's Association Heart of America Chapter, the Jackson County Senior Center, and K-State Research and Extension—Meadowlark District will host a series of educational programs designed specifically for caregivers. These sessions will focus on practical tools, strategies, and resources to help caregivers navigate their roles more effectively. Participants are welcome to attend all four sessions or select the ones that best meet their needs. All sessions are free and will be held at the Jackson County Senior Center in Holton.

- **Wednesday, April 29-10:00 a.m. -**
  Session One: Building Foundations of Caregiving: Explore relationship changes, the person-centered care approach, and how to build a caregiving team support system.
- **Wednesday May 6—10:00 a.m.**
  Session Two: Communicating Effectively: Explore how dementia and chronic conditions affect communication, strategies to help you communicate well, improve communication with family, friends, and health-care professionals.
- **Wednesday May 13—10:00 a.m.**
  Session Three: Dementia Related Behaviors: Learn how dementia can cause changes in behaviors, understand possible triggers, discover medical and non-medical ways to address behavior, and learn about the four-step approach to managing behavior.
- **Wednesday May 20—10:00 a.m.**
  Session Four: Supporting Independence and Exploring Care and Support Services: learn how to help make activities meaningful, know the right amount of support, learn how dementia affects safety, and learn about support services in your community.

To sign up for session or for more information about these and other Extension programs please contact Teresa Hatfield at **www.thatfield@ksu.edu** or call 785-364-4125.

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

No news this week