

Jody G. Holthaus
District Extension Agent
Livestock and Natural Resources

Lots of Rain, More Problems!

So with all of this rain, we have lush grass growth. More moisture can mean more flies, mosquitoes and foot rot!

Foot rot is a necrotic infectious disease of cattle (and other livestock) which causes swelling and lameness in one or more feet. "Necrotic" implies tissue decay and death, and if you've been around a bad case of foot rot you know that it can get pretty stinky. Spreading of the toes and dewclaws are fairly classic signs of foot rot. Generally, some injury or softening and thinning of the skin between the toes provides the entry point for the infectious agents that cause foot rot. This might be from rough ground, muddy conditions, or a myriad of other conditions that cattle might encounter in their environment. The bacteria cannot gain entry to the skin by themselves and cause foot rot.

A bacteria called *Fusobacterium necophorum* is most commonly associated with foot rot. It is a normal resident of the digestive tract in ruminants, and may survive in soil for up to 10 months. It secretes a toxin that interferes with white blood cells ingesting bacteria and causes the tissue decay and pockets of pus. In cattle foot rot, *F. necophorum* commonly cooperates with another bacteria, *Bacteroides melaninogenicus*, which produces protein-degrading enzymes that damage the subcutaneous tissue and tendons. Treatment of foot rot is generally quite successful, especially when treated early. Recovery can often be observed in 3-4 days from one antibiotic treatment. Multiple treatments may be necessary if the foot rot is not caught early and has progressed over the course of several days. Penicillin, oxytetracycline and sulfonamides are effective antibiotics to use for foot rot cases (always read and follow label directions, using appropriate administration technique). If animals do not respond at all to treatment within 3-4 days, evaluation by a veterinarian in a timely manner may be advised.

Prevention of foot rot may focus on management practices that reduce the likelihood of injury to the skin between the toes. Maximizing drainage around water tanks or other areas that are likely to get muddy (feed bunks, etc.) and minimizing time cattle spend standing in wet areas or on rough ground (perhaps easier said than done!) decreases conditions that might predispose foot rot.

Some producers may have used supplements containing chlortetracycline (CTC) for control of the diseases on its label and seen decreased foot rot incidence. You will need to get a Veterinary Feed Directive to use (CTC) supplements.

Another approach to prevention is to focus on mineral nutrition, particularly zinc. Zinc is important in maintaining skin and hoof integrity. Cattle should be provided with adequate dietary zinc to help minimize foot rot and other lameness issues.

Consult with your Veterinarian on your treatment protocols.

David G. Hallauer
District Extension Agent
Crops & Soils/Horticulture

Nitrogen Loss Concerns

Arguably the most important nutrient in corn production is nitrogen. If not the most important, it certainly is the nutrient we apply in the greatest quantity – and one of the reasons so many are so concerned about how much this spring’s weather may have reduced its availability.

Nitrogen is lost during wet springs by way of two mechanisms: leaching or denitrification. Both involve the nitrate form of nitrogen and are affected by numerous factors like soil temperature and oxygen content, pH, and the type of product applied. Leaching is typically an issue on coarse (sandy) soils where lots of rain has moved through the soil profile. Denitrification is worst on medium or fine textured soils under warm and wet conditions.

This spring’s rainfall has been well above normal, leading many to wonder just how much nitrogen we might have lost – and whether supplemental nitrogen may be a necessity. The answers are not ‘one size fits all’, but we can make a few generalizations that may help as you make a decision about how much additional N might be needed – and where it should be applied.

First, N loss depends a lot on the N form in the soil, with nitrate N being subject to the most loss. If N is in the ammonium form, losses should be small. Second, saturated soils will have the most potential for denitrification loss, since oxygen limited conditions are where the microbes responsible for denitrification thrive. Third, the potential N loss from denitrification increases as soil temperatures warm. According to University of Nebraska research, a 60-degree temperature soil can be saturated for five days resulting in a 10 percent nitrate nitrogen loss. If we increase soil temperatures to the mid 70’s, a saturated soil might see 60 percent nitrate N loss in just *three* days. The average two-inch soil temperature at Hiawatha: 66. Silver Lake is at 71.

Bottom line: cooler soils have likely limited N loss to some degree so far this spring. Those applications most at risk to loss are those done early last fall, with late fall and early spring applications likely seeing limited loss. That’s the good news. The bad news is that we are likely going to see soil temperatures continue to warm with the potential for more moisture in the forecast, leading to the potential for more N loss. In many cases, farms that received anhydrous early last fall should probably be in a position to apply supplemental N as the opportunity arises. Others may not have lost much yet, but June weather will be a big factor in continued N losses.

As you consider supplemental N, keep these factors in mind as well: First, we have a big window for application. Recent work has shown that N applied close to tasseling can still be effectively used by the corn crop. Second, not all yellow corn is N deficient. In some cases, it’s likely just due to wet feed that may be causing other issues as well. Much of our corn right now is uneven and off color. Some of this will correct itself as weather permits the corn to better ‘take off’. Third, monitoring might be a good option this year. Reference strips where 50-75 pounds per acre of supplemental N are applied can be good tools to help you determine whether N loss is the culprit, or something else is going on. Two years of work with reference strips in NEK showed mixed results to added N because N *loss* wasn’t always the issue. For assistance with reference strips, feel free to drop me a line.

For a more thorough explanation of the potential for N loss, see the most recent KSU Agronomy eUpdate article available at: https://webapp.agron.ksu.edu/agr_social/article/wet-soils-and-n-loss-how-much-of-the-applied-nitrogen-has-undergone-nitrification-337-1 .

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

Frying with Hot Air

Instead of frying in oil, maybe an air fryer is for you! Reducing oil in foods is one way to make foods healthier. So how does a hot air fryer work?

Extremely hot air circulates around food with a fan. It creates a crispy surface layer and the inside stays moist. This is similar to convention oven cooking. Only a small amount of oil is brushed on the food surface to aid the crisping process. Cook in small batches for even and complete cooking.

When shopping for an air fryer, first consider your kitchen counters and storage space. Do you have room? If the appliance is not visible, it is less likely to be used. There is no oil to dispose of or lingering oily odors. But does the food taste the same with similar crunch? Maybe, maybe not. Just remember to consider making healthier meals for you and your family to reap the rewards.

Are You Prepared for Storm Disasters?

If your home had been hit by one of the recent storms, would you have been prepared? If your answer is “no,” now is the time to take action!

An excellent website to look at is www.ready.gov. You will find lists of supplies to have on hand, suggestions for a disaster plan and ways to keep informed. Here is the basic list of items you will want to have in a basic emergency supply kit:

- *Water, one gallon of water per person per day for at least three days, for drinking and sanitation.
- *Food, at least a three- day supply of nonperishable food.
- *Battery-powered or hand crank radio and NOAA Weather Radio with tone alert and extra batteries.
- *Flashlight and extra batteries.
- *First aid kit.
- *Whistle to signal for help.
- *Dust mask, to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place.
- *Moist towelettes, garbage bags and plastic ties for personal sanitation.
- *Wrench or pliers to turn off utilities.
- *Can opener for food (if kit contains canned food).
- *Local maps.
- *Cell phone with chargers, inverters or solar chargers.

Of course you may want to include other items that pertain to your family like medications, formula, diapers, supplies for your pets and so on. The main thing is that you the essentials for your family and to have them ready.

For more information and items to include in your kit go to ready.gov—under the plan ahead tab and the other tabs are many resources to make sure you have a plan in place and are ready for any disaster that may strike. Another important item is a “grab and go” bag.

K-State Research and Extension has a publication to help you plan ahead. It’s called, Get Financially Prepared: Take Steps Ahead of Disaster. It can be found at: <https://www.bookstore.ksre.ksu.edu/pubs/MF3055.pdf> Let’s hope that you don’t need to use this, but it good to be prepared for any kind of emergency you might be faced with.

May 31, 2019

Nancy C. Nelson
Meadowlark Extension District
Family Life

No news from Nancy this week.