

News Column
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FORAGE NITRATE TESTING

When I first saw the text from Ryan that read, “Kinda boring this time.” I thought he was talking about the K-State versus Nebraska volleyball match.

Then I saw the picture he had sent immediately before the text. They were introducing the opposing team at the volleyball match and Ryan was holding up a copy of the Riley Countian (students ignore the opposing team by hiding behind newspapers during team introductions). His newspaper was open to page five, where my news column was printed.

It wasn't the volleyball match that he found boring.

If you thought that column was boring, Ryan, you might as well stop reading now because I'm ready to transition from the fluff to the facts. Today's topic is nitrate toxicity. I'm sure it isn't a topic you've stayed up late researching on your own. Heck, you don't even know what I'm talking about, do you?

Nitrate toxicity can be a problem for cattle and small ruminants (sheep and goats) during drought years. When nitrate levels are too high in feeds, animals can become sick and may die. While not always the case, death is usually the first symptom noticed.

Signs of nitrate toxicity include reduced appetite, weight loss, diarrhea, and runny eyes. Lower levels of nitrate toxicity can cause abortion without any other noticeable symptoms.

Nearly all plants contain nitrates, but some are more prone to accumulate nitrates than others. Crops such as forage sorghum, grain sorghum, sudangrass, and hybrid sorghum-sudan

are notorious nitrate accumulators.

Nitrates accumulate in plants during periods of moderate drought because the roots continually absorb nitrates, but very high daytime temperatures inhibit its conversion to amino acids. During a severe drought, lack of moisture prevents nitrate absorption by plants roots.

Following a rain, however, roots rapidly absorb nitrates and accumulate high levels. After a drought-ending rain, nitrates will be metabolized to normal levels after at least two weeks with optimum conditions.

The question we need to ask ourselves is, “How severe was this drought?” Do we think it was severe enough that nitrates haven’t yet accumulated in plants, or was it a moderate drought and we can expect forages to be high in nitrates?

While I can’t guess whether forages are already high in nitrates, the one thing I don’t recommend is harvesting in the two week period after a drought-ending rain. Forages may or may not already be high in nitrates, but the odds of a problem are greater during that rapid uptake period right after a rain.

If I am grazing milo or corn stalks, I’m usually comfortable turning cows out without testing for nitrates. The reason is because nitrates accumulate toward the lower portion of the plant and that is the last part of the plant cows will eat when grazing. They will eat the leaves first and nitrates shouldn’t be a concern that far up in the plant.

Baled forages are a different story. Because the whole plant is baled up and because we expect cows to eat it all, we should be testing baled forages for nitrates.

Some people like a rapid test, but I gave that bottle of acid away years ago. Since we are right here in Riley County, with the K-State Soil Testing Lab right in our backyard, I always recommend a lab test to get an accurate analysis.

We have a forage probe you can use to test bales, or you can test standing forages by selecting several plants from a stressed part of a field, chopping the leaves and stalks, and putting the sample in a gallon-size resealable plastic bag.

Bring the sample to the Extension Office and we will deliver it to the lab for you. The cost of testing for nitrates at the KSU Soil Testing Lab is \$7.50 per sample.

If you have questions, you can reach me at the Riley County Extension Office at 785/537-6350. Or, you can send e-mail to gmclure@ksu.edu.

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