Tall Fescue: Can't Live With It, Can't Live Without It!

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Of all the cool-season grasses that we have available for our beef cattle operations, tall fescue is one of the best. It has some of the best fall growth and retains nutrients into the winter, making it well-suited for stockpiling. As most everyone knows, however, tall fescue can cause problems with animal productivity, known as tall fescue toxicosis.

Tall fescue toxicosis starts with a fungus that lives in the tall fescue plant, known as an endophyte. It is primarily concentrated in the seeds. The endophyte produces toxins known as ergot alkaloids (ergovaline is a specific one we're concerned with) that cause tall fescue toxicosis.

Symptoms seen depend on the time of the year. In the summertime, you might see cattle that have long, rough hair coats and tend to congregate in shade or ponds. In the wintertime, cattle may experience fescue foot, which can include lameness or sloughing off of the hoof.

New varieties of tall fescue were developed to help combat toxicosis. Initially, endophyte-free varieties were developed. While eliminating toxicosis issues, the plants were less hardy than their endophyte-infected counterparts. So, new varieties were developed that still contain an endophyte (which is beneficial to the plant) but without causing harm to livestock that graze it. With the "novel" endophyte present, cattle have increased forage intake, increased gains, and better reproductive rates, compared to those on endophyte-infected fescue.

Symptoms occur in winter and summer, but ergovaline production is highest in late spring and in late fall. Researchers have found that toxins are retained in the fat tissue of the animal, so those compounds are still affecting the animals during the environmentally stressful times of the year – the heat of the summer and the cold of the winter.

To manage tall fescue toxicosis, the first step is to test your tall fescue pastures to determine the level of infection. If the results come back as high, you have two choices: replace the infected fescue with another forage, or implement management strategies with your existing fescue pastures.

If you make the decision to replace your infected fescue, and choose a novel-endophyte-infected variety, manage it carefully. Intakes will be high and overgrazing can be an issue.

If you have high levels of infection but decide to manage around it, remember two things: alkaloid management and incremental improvement. Alkaloid management means that you reduce total ingestion of the endophyte during the grazing season – after all, the symptoms of fescue toxicosis will not match when the animals have consumed the ergovaline. Another key is that when you implement different management practices (which we will discuss below), those practices only provide partial improvement. You must incorporate several strategies to even come close to the level of productivity on novel-endophyte infected fescue.

Rotation to other pastures is an obvious way to reduce alkaloid ingestion. Of particular importance is late spring and summer pasture. To avoid the problems of fescue toxicosis cattle must graze vegetative fescue, so if production is higher than the cattle can keep up with, they must be removed before seedheads are produced.

Some cattle are more susceptible to the affects of endophyte-infected fescue. Select for cattle that are naturally slick-haired and shed their winter coats easily; cull those that live in ponds or shade.

Dilution of tall fescue pastures is another suggested practice. Incorporation of other grasses or legumes helps reduce the amount of fescue consumed, and legumes are especially helpful for increasing the quality of the pasture. Dilution can also be achieved by feeding supplements.

What happens to the endophyte over time in different storage methods of tall fescue? Ergovaline in hay will decrease over time; 50 percent of it disappears in one year (2/3 of that within one week). With haylage, ensiling has some detoxifying affect, but this is variable. In stockpiled tall fescue for grazing, ergovaline decreases over the winter. So, it might be wise to utilize your hay early, then use the stockpile after its ergovaline levels have decreased. The stockpiled fescue will have retained most of its nutrients. Δ

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