NIPPING TALL FESCUE IN THE BUD

Dennis Hancock, PhD. | Assoc. Professor and Extension Forage Agronomist
The University of Georgia

It is always best to prevent problems before they become problems. Take tall fescue, for example. We know tall fescue causes major problems in the cattle industry. Experts agree that tall fescue toxicosis costs the cattle industry well over $1 Billion every year. To borrow a phrase from The Andy Griffith Show's Barney Fife, we've "got to nip it in the bud."

Tall fescue is planted in about 40 million acres of pasture and hay fields across the U.S. It is high yielding and holds a good stand even under some really abusive management. But, over 90% of the tall fescue in this country has a fungus that grows inside it called *Neotyphodium coenophialum*. This fungus is a partner with the tall fescue. It helps the fescue fight off hard times, like when it gets hit by insects, disease, drought stress, and overgrazing. Even though this partnership makes it resilient, it also causes fescue to produce certain types of plant compounds that are toxic to animals. When cattle graze toxic tall fescue, it can cause a whole set of disorders, which we collectively call fescue toxicosis. Cattle grazing toxic tall fescue have such poor circulation that their tail switches and hooves can fall off, they constantly have a temperature 3-4°F higher than normal, and production drops like a stone.

Compared to non-toxic fescue, cows grazing toxic tall fescue give around 25% less milk, spend about 20% less time grazing, drink 25% more water, and lose up to 2 points of body condition. Their calves have weaning weights that are 60-90 lbs lighter and gain about 40% less. When looking across 23 research studies from across the fescue belt, researchers found that cow herds grazing toxic tall fescue had pregnancy rates averaging about 60%. Cattlemen who fail to produce a calf-crop off at least 90% of their cows are failing to optimize their production. So, for a lot of cattlemen, toxic tall fescue is stealing them blind.

Historically, cattlemen in fescue country have just had to grin and bear it. They could use clover in their pasture to try to offset the toxins or other species in the mix to try to thin it out. But, those strategies were only marginally successful. Then the non-toxic, novel endophyte tall fescues were introduced. These are very successful and are a permanent solution to the problem. But, a total renovation of a farm's forage base is hardly a trivial task. Though this is still the best long-term solution, it may not always be the best option for every producer especially in years when cash flow is a trickle.

There now appears to be a better option. Some interesting research out of Kentucky and Missouri has shown that certain herbicides can nip tall fescue seedhead production in the bud and that this can have a major impact on forage quality, animal performance, and reproductive efficiency. In the KY study, treated pastures had more than 90% fewer seedheads, 42% higher crude protein, 14% more water soluble carbohydrates, and were 13% more digestible than untreated pastures. They used stocker calves to measure the effect on animal performance, and they found average daily gains increased about 20% in one year and around 65% in the second

year when the seedheads were chemically suppressed.

In 2014, researchers at Missouri State University worked with Circle A Angus in Stockton, MO to collect data on 12 of their herds, each on different toxic tall fescue-based farms. Circle A supplements their cows each day with dried distiller's grains to ensure nutrition isn't holding back reproductive efficiency. For this trial, they treated 8 farms with the seedhead-suppressing herbicide and four of their units had no herbicide treatment. The farms that were treated averaged an 89% pregnancy rate while the untreated farms averaged 80%. All they had to do was spray their pastures just prior to seedhead development so they could nip it in the bud.

Plus, the herbicide provides excellent broadleaf weed control. Currently, the only product on the market that is labeled for tall fescue seedhead suppression, Chaparral™ from Dow AgroSciences, also is one of the best broadleaf herbicides on the market for use in pastures and hayfields. The aminopyralid in Chaparral™ also provides good residual weed control, as well.

Figure 1. Tall fescue seedhead suppression using Chaparral™ (right) compared to the untreated control (left) two months after application. Photo courtesy of Dow AgroSciences.

So what's the catch? Seedhead suppression in tall fescue comes at a cost. I'm not necessarily talking about the cost of the herbicide, which is fairly comparable to other broadleaf herbicides. I'm referring to the downside of suppressing seedheads in tall fescue. The first challenge that the cattlemen will see is that treated fescue will look yellow and stunted for a few weeks after the application. Even at the low rates recommended for seedhead suppression, the metsulfuron in Chaparral™ will stunt the fescue. In addition to the yellowing, it reduces the yield of tall fescue, mainly because it reduces seedhead production by over 90%. This shouldn't be surpising, since seedheads often account for more than half of the total forage produced by tall fescue in the spring.

Unfortunately, this yield reduction causes the stocking density of treated pastures to be temporarily reduced relative to untreated pastures. Less forage means fewer cattle. This short-term reduction in stocking density is overwhelmed by increased weaning weights and reproductive efficiency, such that the pounds of weaned calves produced per acre is substantially improved by the application of Chaparral™ for seedhead suppression. Though a detailed economic evaluation has not been done, the increased calf crop from treated fields appears to be profitable in most years. And, if the field would've been treated with a broadleaf herbicide anyway, it appears to be a win-win.

Still, more long term research is needed. For example, one could assume that suppressing tall fescue seedheads would put additional stress on the stand. To date, there's been limited research on the effects of long-term use of seedhead suppression and whether or not it will shorten stand life. So, we don't know what those long-term effects are going to be. It is recommended that no more than half of one's acreage be sprayed each year and that the pastures

be rotationally grazed to minimize stress. With these precautions, the risks are low and the benefits are high.

If you are interested in nipping tall fescue in the bud using Chaparral™ for seedhead suppression, use these steps for best results:

1. Ensure that the tall fescue stand is strong, fertilized according to Extension recommendations, and treat no more than 50% of your acreage in a given year..
2. Apply Chaparral™ at a rate of 2 oz. per acre in spring sometime between 3 weeks prior to reproductive tiller development and just before the seedhead emerges (boot stage).
3. The fescue will be stunted for a few weeks, so adjust stocking density to ensure adequate pasture is provided to livestock on treated pastures during the short-term yield difference.
4. For best results, use rotational grazing to minimize the risks of overgrazing and maximize stocking rates.

Note: Mention of individual product or company names does not imply endorsement. The product recommended in this article is currently the only product labeled for the practices recommended herein. I have not received funding for research on this or other products from Dow AgroSciences, nor have I been compensated by them for writing this article.