

## **Focus on forages**

### ***Summertime fescue toxicosis mitigation strategies***

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As the heat and humidity of summer sets in across Tennessee, many of the state's beef cattle grazing endophyte-infected tall fescue may begin to show signs of fescue toxicosis. We often hear about the negative aspects of tall fescue, but it's important to keep in mind that as beef cattle producers in the Southeast, tall fescue is one of our best friends and worst enemies - all rolled into one. Without tall fescue, many of our pastures and hayfields would be far less productive. Instead, they're capable of supporting stocking rates that are 5 to 100 or more times greater than that of many other parts of the country, with fairly low input. Nonetheless, endophyte-infected tall fescue does come with its disadvantages. Those pesky fungal endophytes that provide the plant with its resiliency to heat and drought also produce compounds that can have negative consequences on performance when consumed by the animal.

Over the years there have been many attempts at fix-all cures for mitigating the effects of tall fescue on animal performance. Although some have yielded small improvements in average daily gain or reproductive success, many have yielded inconsistent results. Tall fescue toxicosis is a multi-faceted condition, with the reduction in performance resulting from combined effects on a number of different physiological systems. The multi-faceted nature of the condition makes it difficult to completely alleviate, which ultimately will require rendering the compounds unavailable to interact with the animal at the metabolic level. Nonetheless, there are some methods, "proven-in-time" so to speak, that are capable of alleviating fescue toxicosis to a substantial degree. These practices are based upon reducing the amount of the compounds that are consumed by cattle, or countering the negative effects that appear following consumption.

Aside from providing continuous access to shade and cool, clean drinking water, one of the most effective means of mitigating the effects of tall fescue includes establishing and maintaining pasture diversity, primarily through inter-seeding a legume such as red clover. Although this is a highly recommended practice, it must be incorporated long before the onset of fescue toxicosis, as mid-summer establishment of legumes in an existing tall fescue stand is rarely successful. However the basis upon which legumes mitigate fescue toxicosis is not unique to a specific legume, but rather a function of dilution. It just so happens that tall fescue stands better co-exist with red clover than most other forages. Nonetheless, mid-summer dilution can be achieved by supplementing cattle with other non-fescue feedstuffs. Daily supplementation with a fiber-based commodity byproduct such as corn gluten feed, distiller's grains, or soyhulls can mitigate a substantial portion of fescue toxicosis. Commodity blends and other complete feeds, as well as non-fescue pastures and hays can be equally effective.

Dilution of these compounds can also be achieved by clipping pastures immediately following seed-head emergence. This is possible because the majority of the compounds accumulate in the seed, with much lower and often negligible concentrations accumulating in the plant leaf material. Ideally, pastures should be clipped as high as possible while ensuring that the majority of seed heads are removed. Additionally, the benefits of seed-head elimination do not end with toxicosis mitigation, as clipping stimulates vegetative forage regrowth while reducing weed prevalence. Eliminating seed heads will also aid in pinkeye prevention, as seed heads scratch the cornea of the eye and provide opportunity for invasion by bacteria that are spread by face flies.

Mineral supplementation is another effective fescue mitigation strategy that should not be overlooked. The compounds that result in fescue toxicosis bind to some micro-minerals such as copper and zinc, rendering them unavailable to the animal. This is of critical importance, as the majority of Tennessee pasture forages are deficient in copper and zinc, and also contain critically high levels of other minerals such as sulfur. Sulfur interacts with copper, reducing the availability of copper to the animal. These factors may also be the reason why some symptoms of fescue toxicosis often mirror those of a copper deficiency. In order to address this issue, ensure that cattle have continuous year-round access to a free-choice mineral supplement that is fortified with relatively high levels of copper and zinc.

The exact level of supplemental minerals that is appropriate for your operation depends upon the mineral composition of your forages. In order to design the most appropriate mineral supplementation program, conduct a forage analysis and consult your county Extension agent and/or nutritionist for guidance. Many mineral supplements marketed for cattle grazing tall fescue are medicated with chlortetracycline (CTC). However, the benefits associated with feeding CTC to cattle grazing tall fescue are a function of its normal effects on average daily gain and feed efficiency, which are independent of management setting. Thus, CTC does nothing to specifically combat fescue toxicosis. The resulting improvements in performance are a function of CTC's role as a growth promotant rather than mitigation of fescue toxicosis. Additionally, avoid feeding trace mineralized salt in place of a free-choice mineral supplement, as it does not contain a sufficient amount of minerals to meet beef cattle requirements in almost all forage-based production scenarios. Never "cut" a commercially-manufactured free-choice mineral supplement with salt to reduce consumption. Free-choice consumption is generally proportional to the mineral needs of the animal. Limiting consumption with the addition of salt may lead to mineral deficiencies that could worsen the degree of toxicosis, or result in other costly metabolic conditions.

Although there are currently no fix-all cures for fescue toxicosis, the aforementioned management strategies have been proven in practice to decrease the negative effects of endophyte-infected tall fescue on cattle performance throughout the summer months. Hopefully time will shed some light upon new technologies or strategies that completely mitigate the negative effects of this forage species that is essential to beef production in the Southeast. In the meantime, consider clipping pastures to remove seed heads, feeding a good quality free-choice mineral supplement, and if necessary, supplementing cattle with other feedstuffs to reduce the

severity of fescue toxicosis. And, as always, ensure that cattle have continuous access to shade and cool, clean drinking water.