

Follow the Fescue Roadmap

Diminish opportunities for costly toxicosis to affect in your herd.

by **BARB BAYLOR ANDERSON**,
field editor

Beef producers who planted Kentucky 31 (KY-31) in their pastures during the 1950s were excited by the ease with which they could establish the tall fescue and maintain a stand. But it didn't take too long for researchers to find an associated fungus was affecting animal performance.

"Kentucky 31 tall fescue accounts for more than 40 million acres of pasture and forage in the United States. Probably 95% of beef producers in the 'fescue belt' should be managing their operations for fescue toxicosis. It is a widespread problem and one that costs more than \$1 billion per year," says Craig Roberts, University of Missouri (MU) state forage specialist.

Roberts stresses that fescue toxicosis can have a devastating effect on beef cattle: 30% less milk production, 40% reduction in calving, average loss in gain of seven-tenths of a pound (lb.) per day, and a

loss of 56-112 lb. per animal in weaning weights.

"There is no cure, just management strategies that will diminish the impact," says Roberts. "Tall fescue should be managed to reduce or eliminate toxicosis to have the greatest impact on animal performance. That begins with producers first testing their fields to determine endophyte levels and then developing the best management strategies for their farms based on results."

Endophytes are small fungi that grow between the plant cells. Endophytes can produce ergot-like alkaloids under certain conditions. Ergot alkaloids can be highly concentrated in the seed, and are where toxins are found, particularly in the spring. Toxicosis is the result of cattle consuming these toxic ergot alkaloids found in KY-31.

"Producers in some situations have been able to keep toxins at moderate levels by clipping the seedheads and implementing intensive rotational grazing

tactics," says Roberts. "Replacing toxic tall fescue with nontoxic forage is the only way to ensure toxin is no longer present."

Roberts encourages beef producers to work with forage specialists to test pastures for endophyte levels. Producers with low infection levels, under 25%, can keep pasture as is. However, endophyte tests of 30%-45% mean the tall fescue is moderately toxic and probably should be eradicated. Levels of 60% or greater are highly toxic and require replacing toxic grass or managing pastures to reduce the impact.

"It is critical for high-performance animals that include beef stocker, replacement heifer and cow-calf operators to determine endophyte levels," says Roberts. "For every 10% of plants infected, a stocker steer's gains are going to decrease a tenth of a pound per day."

Novel solution

Producers can eliminate ergot alkaloid problems by converting old tall

fescue pastures with cultivars that are endophyte-free or contain novel, nontoxic endophytes.

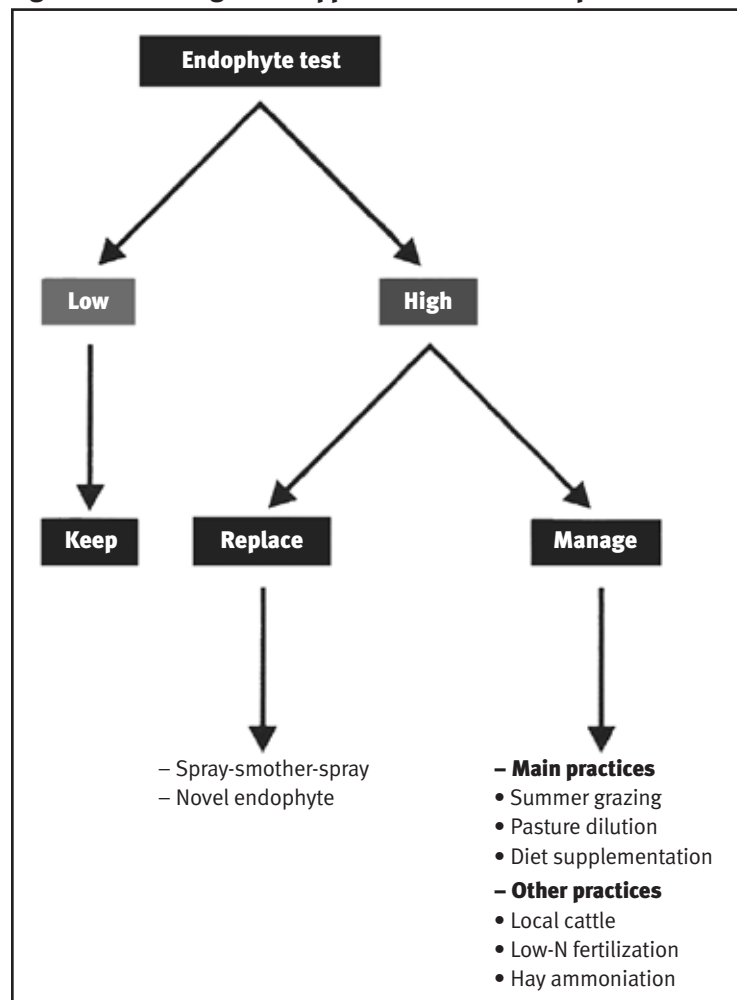
"Endophyte-free cultivars do not persist well and are more susceptible to pest pressures and drought. Novel endophytes increase plant persistence and have been shown to provide higher stocker gains per acre than toxic tall fescue," says Roberts. "Switching to a novel endophyte cultivar requires a good and complete kill of Kentucky 31. The pasture must then be pampered the first year, which means light grazing only."

To be successful, Roberts stresses cultivars chosen must contain the Alliance for Grassland Renewal logo on the bag. The alliance includes industry stakeholders who work to replace toxic tall fescue grass with a novel endophyte product. The alliance label ensures the seed is pure and has a living endophyte — a necessity, Roberts says, to eliminate toxic tall fescue.

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Fescue toxicosis symptoms

Fig. 1: Ideal management approach for tall fescue pastures

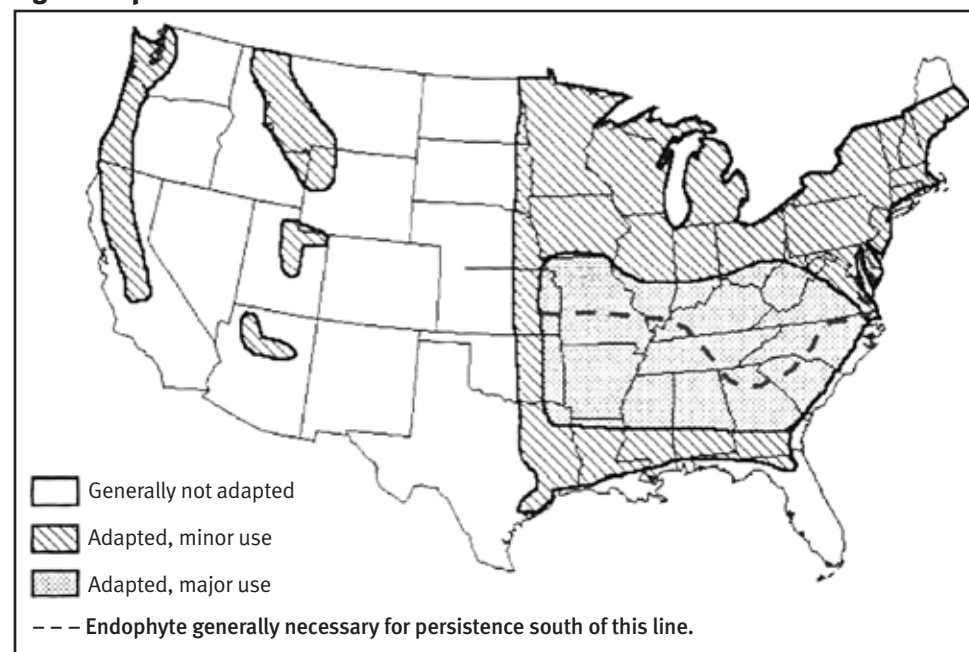


Source: *Fescue Toxicosis and Management*; Craig Roberts, University of Missouri; and John Andrae, University of Georgia.

University of Missouri (MU) State Forage Specialist Craig Roberts says dewormed animals appear to show fewer clinical symptoms of tall fescue toxicosis, perhaps because heat stress is less with a reduced high core body temperature. In addition to high temperature, toxicosis symptoms may or may not present themselves, but can also include:

- Fescue foot
- Shaggy, unkempt appearance
- Vasoconstriction
- Increased respiration rate
- Low heart rate
- Suppression of the immune system
- Low rate of gain

Fig. 2: Adaptation and use of tall fescue in the United States



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“All novel endophyte seed is more expensive than other tall fescue seed. It costs about \$200 per acre to convert a field from toxic fescue to novel fescue,” he says. “This is a substantial out-of-pocket cost and quite an investment. You can’t afford any mistakes. Your return will depend on stocker density, type of operation and beef prices.”

“Research shows Chaparral has to be sprayed at the right rate and right time to prevent seedhead development, but producers need to remember the tall fescue will still be toxic in the fall. This isn’t a cure, but it helps. Cattle will perform well on pretty good spring and summer grazing,” he says. “The downside is you

will have the cost of the herbicide and you can’t spray Chaparral in sequential years. Producers will need to weigh their options.”

Another area of research is genetic testing of animals for fescue tolerance. Preliminary research shows promise in identifying tolerant cattle and confirming

a greater gain in them. Work continues in this area, with results expected sometime later this year.



Editor’s Note: A former National Junior Angus Board member, Barb Baylor Anderson is a freelancer from Edwardsville, Ill.

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“Spray-smother-spray” is one effective process to eliminate toxic tall fescue before planting new cultivars. Fields can be sprayed with glyphosate or another nonselective, systemic herbicide, then no-till drilled with a “smother” crop such as sorghum-Sudan grass for a fall fescue planting or a cereal crop like wheat for a spring fescue planting. After the smother crop is grazed or harvested, the field is sprayed again before planting a new cool-season grass.

“A combination of new and old management practices that limit toxic alkaloid ingestion yet improve cattle health and profitability can also be used,” says Roberts. “Managing toxic tall fescue options include alkaloid management, or altering ordinary pasture management to minimize toxicity rather than maximize yield, carrying capacity or persistence.”

Incremental alleviation is another option, which Roberts defines as the additive effect of employing management practices such as rotating livestock at key times, diluting tall fescue with legumes or other grasses, and feeding supplements. Rotation to summer pastures is another effective management practice, along with feeding nontoxic hay during winter.

Roberts adds that new research is under way to identify even more solutions. For example, studies show spraying toxic fields with Chaparral™ herbicide controls seedheads, eliminates weeds and results in better animal performance.