

Researchers Address Cattle Producers Slow Adoption Of Fescue Toxicosis Solution

FAYETTEVILLE, ARK.

Concerns that are causing beef cattle producers to go slow in adopting what looks like a solution to the problem of fescue toxicosis in their herds are being addressed by University of Arkansas System Division of Agriculture animal scientists and crop scientists.

Animal science professor Ken Coffey said at a recent field day at the Division of Agriculture's Livestock and Forestry Research Station near Batesville that producers can reap the benefits of non-toxic, endophyte-infected tall fescue by planting even a relatively small acreage and using it at critical times.

Fescue toxicosis occurs when cattle eat tall fescue grass that is infected by a fungal endophyte that produces toxic compounds. The toxins reduce calving rates and weight gain and can cause major health problems.

Since the 1950s, beef cattle producers in Arkansas and other states have depended on the Kentucky 31 variety of endophyte-infected tall fescue as a forage and hay crop. It is the most widely grown cool season pasture grass in the United States.

"Kentucky 31 has been a valuable resource for many years, and producers are very loyal to it for good reasons," Coffey said. The endophyte, which infects virtually all KY 31 plants, protects it from overgrazing and increases its tolerance to drought and other environmental challenges.

Tall fescue infected by new or "novel" endophytes compares favorably with KY 31 in persistence and does not cause fescue toxicosis, Coffey said. The MaxQ® brand of endophyte available in the variety Jesup (Pennington Seeds), introduced in 2002, has a solid record of performance, but it has not been widely planted as a replacement for KY 31.

Experimental lines of novel-endophyte infected, non-toxic fescue developed by the U of A System's Division of Agriculture also have performed well in field trials at Batesville and other locations, Coffey said.

Farmers have good reasons for a wait-and-see attitude to replacing their tried-and-true KY 31 pastures, Coffey said. They include the relatively high cost of novel endophyte seed, the expense of converting pastures, concern about its persistence compared to the old standby KY 31, and the fact that they might need to change some management practices.

Ironically, research on fescue toxicosis has resulted in some confusion. Questions at the field day indicated some producers were confusing endophyte-free fescue with newer novel-endophyte fescues.

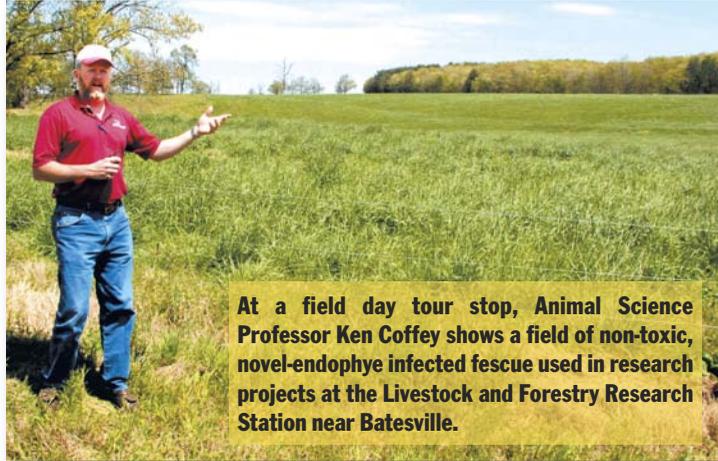
Endophyte-free KY 31 and other "E-free" fescue varieties have proven to be less persistent than either endophyte-infected KY 31 or MaxQ and other experimental novel-endophyte, non-toxic fescues, Coffey said.

Field tests have shown that novel-endophyte fescues have excellent stand persistence when properly managed, keeping in mind that cattle will eat more of the non-toxic fescue than toxic fescue. Therefore, the novel-endophyte, non-toxic fescue pastures must be managed to avoid overgrazing, Coffey said.

"We have learned to live with and manage around fescue toxicosis to a limited degree, but our research and other research show that non-toxic, novel-endophyte fescue can provide significant benefits," Coffey said.

The cost issue of converting to non-toxic, endophyte-infected fescue is being addressed in several ways, Coffey said.

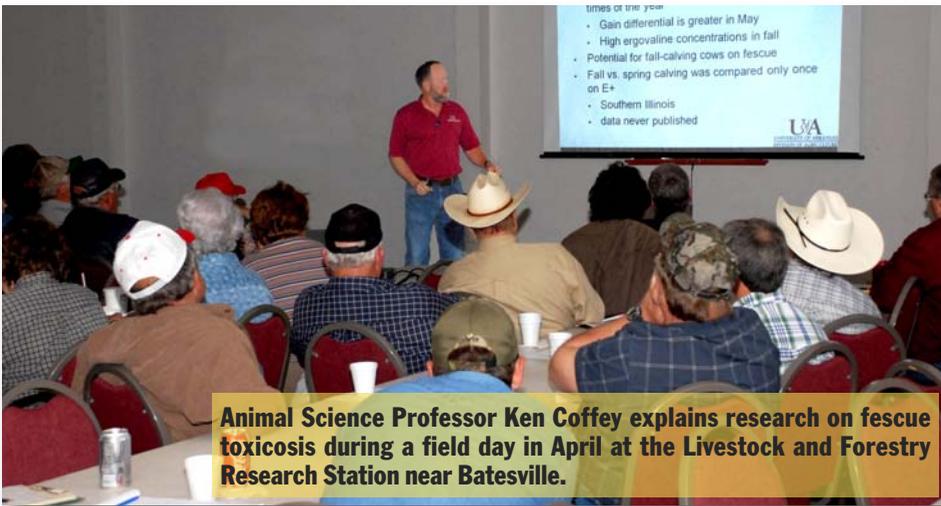
Division of Agriculture crops scientist Chuck West has developed new patented novel endophytes that are being offered to seed companies for development of new varieties of non-toxic, novel-endophyte fescue. When new field-tested



At a field day tour stop, Animal Science Professor Ken Coffey shows a field of non-toxic, novel-endophyte infected fescue used in research projects at the Livestock and Forestry Research Station near Batesville.

varieties enter the market, the price of seed could come down, Coffey said.

West selected the new, nontoxic endophytes from fescue plants he collected from meadows



Animal Science Professor Ken Coffey explains research on fescue toxicosis during a field day in April at the Livestock and Forestry Research Station near Batesville.

and pastures in the Mediterranean region. No genetic transformation was conducted to develop the patented endophyte strains, West said. They were identified by a rigorous process over about 12 years of collecting and testing hundreds of naturally occurring endophytes.

Another cost-saving tactic, researched by Coffey and collaborators at Batesville, is for producers to try a limited acreage of novel-endophyte fescue instead of converting their entire farm.

Field tests at Batesville documented the performance of cows and their calves that grazed novel-endophyte fescue 25 percent of the time and KY 31 the remaining 75 percent of the time. They were compared to cow-calf pairs that grazed only KY 31. Standard practices to reduce fescue toxicosis effects of KY 31 were followed.

The results showed a significant benefit in the spring-calving cows that grazed novel-endophyte fescue just 25 percent of the time, he said. They averaged an 80 percent calving rate and 502 pound weaning weight compared to the KY 31 group's 46 percent calving rate and 492 pound weaning weight.

"Other research has shown that benefits may extend beyond weaning," Coffey said.

Heifers raised on novel-endophyte fescue until they were weaned have recorded higher subsequent calving rates than those raised on KY 31, he said. Neither group was returned to fescue prior to or during breeding.

Based on this research, the 25 percent approach is a good way for producers to start with a smaller acreage of novel-endophyte fescue, learn to manage the forage, and see the benefits without abandoning a system they are accustomed to, Coffey said. Cooperative Extension Service specialists are working with producers to develop management calendars to incorporate smaller acreages of novel-endophyte fescue into their cow-calf operations, he added.

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