

Fall Calving Best For Cows On Tall Fescue, Study Finds

BATESVILLE, ARK.

In cow-calf herds where tall fescue is the main pasture grass, which includes most beef cattle operations in Arkansas, a big advantage for fall-calving cows over spring-calving cows was documented in a three-year research project by University of Arkansas Division of Agriculture animal scientists at the division's Livestock and Forestry Research Station near here.

Kentucky 31 tall fescue is a cool-season grass, but it is often also grazed in the summer and cut for hay on some two million acres in

\$226 per cow exposed (to a bull for breeding) from fall-born compared to spring-born calves," Coffey said.

Better results from fall-calving may be due to less toxin produced by the fungus in KY 31 during critical times of the year when cow production requirements are highest, Coffey said. Toxin concentrations are highest in late spring.

The goal of the three-year study, which used Gelbvieh-Angus crossbred cows, was to identify economical alternatives to help producers avoid losses caused by tall fescue toxicosis, Coffey said. One alternative is clearly to produce a fall calf crop, and another is to move cows off of

toxic forage for seven to eight weeks before and during breeding, he said.

"Infected tall fescue is very persistent and easy to manage, and most producers do not see an advantage to replacing it with one of the novel non-toxic varieties now available," Coffey said.

The study compared performance of cows on 100 percent KY 31 tall fescue to cows on pastures where just 25 percent of the area was replaced with a non-toxic variety to determine if partial renovation of pastures would benefit producers. "One group of cows in fall and spring was moved off of the toxic fescue for four weeks prior to breeding and during the first three to four weeks of the breeding season," Coffey said.

Spring-calving cows on non-toxic fescue for just the seven to eight

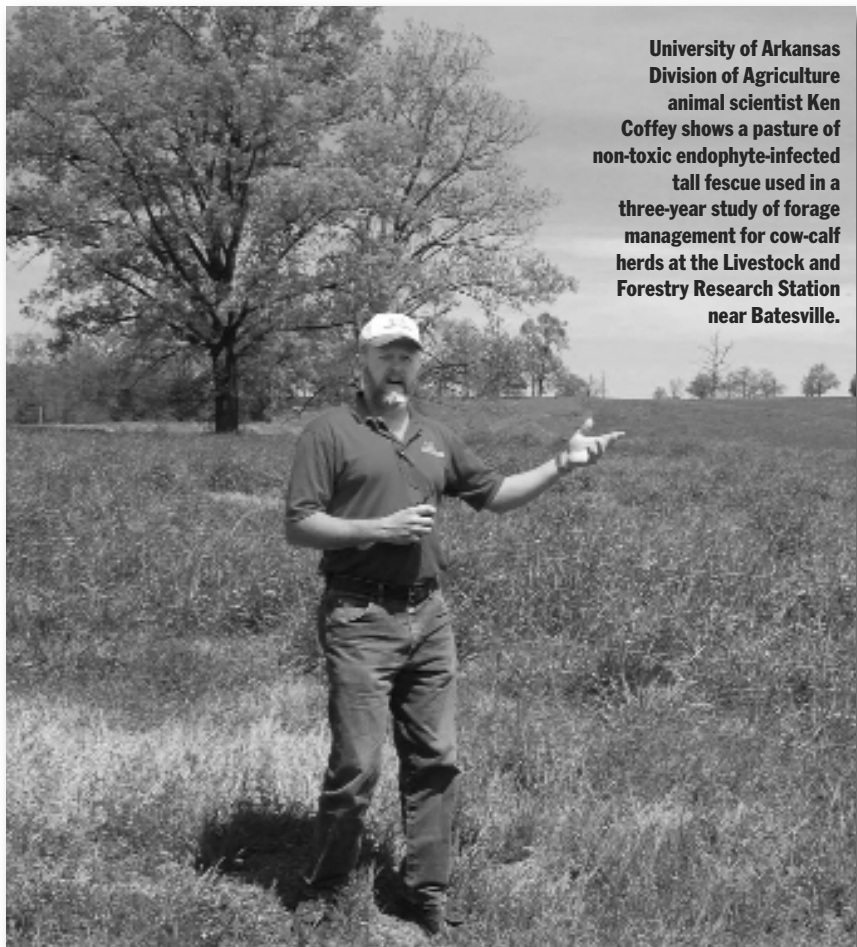
week period before and during breeding had 82 percent higher calving rates, and their calves weighed 29 pounds more at weaning compared to those on 100 percent KY 31.

Fall-calving cows performed well on KY 31 with a calving rate of 89 percent, but calving rate was 7 percent higher and weaned calves were 19 pounds heavier for those moved to non-toxic fescue for seven to eight weeks before and during breeding.

Coffey said the non-toxic tall fescue in this study was an experimental variety that contains a University of Arkansas patented strain of endophyte and is representative of varieties now available from seed companies.

A seed company has been licensed to produce and market seed of a tall fescue variety containing one of the patented novel endophyte strains discovered and tested in cooperative research by Professor Charles West and Professor Emeritus Edgar Piper at the University of Arkansas and Professor David Sleper at the University of Missouri.

West selected the novel endophyte strains from fescue plants he collected from meadows and pastures in the Mediterranean region. No genetic transformation was conducted to develop the patented endophyte strains, he said. They were identified over about 12 years of collecting and testing hundreds of naturally occurring endophytes. Δ



University of Arkansas Division of Agriculture animal scientist Ken Coffey shows a pasture of non-toxic endophyte-infected tall fescue used in a three-year study of forage management for cow-calf herds at the Livestock and Forestry Research Station near Batesville.

Arkansas. Its widespread use is mainly due to a fungal endophyte that infects the grass, which makes it tolerant to drought and other harsh conditions, Coffey said. However the endophyte also produces toxins that reduce weight gain, immune function and reproduction in livestock.

Tall fescue varieties infected by non-toxic endophytes, which have the same benefits as Kentucky 31 but without the toxicity to livestock, are now available.

In addition to the advantages of fall calving, the study found that spring calving rates were much higher when cows were moved to non-toxic tall fescue pastures for seven to eight weeks in the spring beginning four weeks before breeding, said Professor Ken Coffey, who directed the project.

"A seven to eight week window away from toxic forage at this critical time made a big difference," Coffey said.

"We often see better performance by fall-calving cows, but this is the first study that documents the difference, and we were surprised by how much better they performed," Coffey said.

Calves born in the fall also weighed 47 pounds more at weaning than those born in the spring when both groups grazed only KY 31 fescue, Coffey said.

"The combination of additional weight and seasonal price fluctuations resulted in \$85 greater value per calf sold (2008 - 2010) and