



Mid South (MSA) Lexington, Kentucky

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Research

Research Project: [Approaches to Minimize the Occurrence of Fescue Toxicosis in Livestock](#)
Location: [Lexington, Kentucky](#)

2006 Annual Report

4d. Progress report.

This report serves to document research conducted under a Non-Funded Cooperative Agreement between ARS and the S&B; Cattle Company. Additional details of research can be found in the report for the inhouse research project 6440-21310—001-00D, Enhance Forage-Based Livestock Production Systems. Numerous research studies have been conducted to evaluate the effects of fescue toxicosis on cattle production and health. Some of these studies have looked at ways to relieve or alleviate fescue toxicosis. However, there has been no research conducted on how the winter hair coats that fescue cattle retain over the summer have on heat stress associated with toxicosis. Many beef cattle producers and feedyards use ear implants in their cattle to achieve higher daily gains. Some of these contain both progesterone and estradiol while some contain only estradiol. Research with humans has shown that estradiol is a vasodilator and there is some evidence that progesterone is a vasoconstrictor. Since estradiol is a vasodilator it is suspected that it could alleviate heat stress. A grazing experiment was conducted using 62 Angus steers to determine the effects of hair coat retention on heat stress in beef cattle exhibiting fescue toxicosis and to determine if estradiol implants will alleviate heat stress. Steers were randomly assigned to either an unclipped or clipped treatment in which the hair coat was clipped and received either an estradiol ear implant or estradiol-progesterone ear implant. Steers grew a significant amount of hair along with retaining their winter hair coats. Data collected showed animal performance remained steady during the first 56 days of the experiment but sharply declined thereafter. Grazing frequency data supports the decline in animal performance. Sweating rates consistently declined over the dates that measures were collected. Data indicates a trend towards higher sweating rates in clipped cattle and estradiol implanted cattle. Rectal temperatures were slightly lower in clipped cattle. Ultrasound measures will be collected at the conclusion of the grazing period to determine if estradiol implanted steers have higher blood flows, information that would support data showing higher sweating rates for estradiol implanted steers. Results indicate that winter haircoats that are retained over the summer can have a slight insulation effect on elevated core body temperatures in fescue cattle. Cattle grazing tall fescue in the summer that can shed their winter haircoats and are implanted with an estradiol implant can have higher evaporative heat loss due to greater sweating.

Project Team

 [Aiken, Glen](#)

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