

# Temperature Studies

## Dixon Springs Trials Aim To Select Better Producers

**BETTY VALLE GEGG**  
MidAmerica Farmer Grower

### DIXON SPRINGS, ILL.

A long list of research projects is underway at the Dixon Springs Agricultural Center (DSAC) in Illinois, according to Frank Ireland, Research animal scientist with the Animal Sciences Department.

"We're one of the largest beef cattle research centers in the nation," he said. "Certainly, DSAC is one of the largest beef cattle research centers in the Midwest with approximately 4,500 acres dedicated to beef cattle research. With the availability of land for grazing cattle, we are currently calving approximately 850 pregnant cows in late August and early September. All of these cows are used on various research projects looking at ways to improve conception rates and estrus synchronization."

Calves and replacement heifers produced at DSAC are currently assigned to research projects focused on the impact of genetic background and different nutritional and management variables on feed efficiency of cattle grazing forages and in the feedlot. The University of Illinois has a large and active research program in gene mapping.

"We hope to identify genetic markers that may assist with identifying animals with predictable performance either as brood cows or as feedlot animals," Ireland continued.

Another project he's really excited about is one where replacement heifers born at DSAC are sent to the main campus research facility at Champaign-Urbana where they are put on the computerized Grow Safe feeding system at the South Farm facility.

"We're able to get that individual feed intake and performance along with the conversion rate on those animals before the heifers are returned to DSAC for breeding," he explained. "We have pregnant heifers at DSAC that went to campus last summer to obtain relative feed intake information. This summer we will be looking at the performance of these heifers while grazing endophyte-infected tall fescue pastures. With tall fescue being the principal cool season grass throughout the Midwest, we feel that research that looks at the problems associated with grazing endophyte-infected tall fescue is certainly something that can impact most producers."

Ireland hopes that with the combination of the data from the computerized feeding system and the data being generated at DSAC utilizing the Smart Stock temperature monitoring system, which allows the hourly monitoring of cattle body temperatures, genetic markers may be identified and expected progeny differences (EPD's) developed allowing the selection of animals that are more tolerant of environmental factors, such as grazing tall fescue.

"We're currently involved with one of the largest beef cattle research projects in the nation focused on obtaining genetic information relating to relative feed intake. This research, supported by the American Angus Association and the American Simmental Association, may provide information vital to producers trying to cope with increasing feed costs."

For consumers, high quality beef might become more cheaply available.

"I think as feed costs increase in agricultural systems, it is going to be very important to identify those animals that have the highest ability to convert feed into beef," Ireland states. "If two cows are consuming the same amount of feed but one is converting it to meat or milk at twice the rate as the cow beside her that's got to be important to producers as feed costs rise."

Once particular animals are identified, Ireland and researchers at the University of Illinois will look at those individuals more extensively. "Are these characteristics heritable and, if so, what is the level of heritability?" "If these traits are heritable, can genetic markers be identified that allow us to select these individuals?" All are questions that the research program is addressing.

The cattle breeding program at DSAC involves the selective mating of cows and bulls with varying expected progeny differences (EPD's) for carcass traits. Bulls with pedigrees with high levels of carcass traits are mated to cows with high, medium, or low estimates for these traits. Likewise, bulls with medium and low pedigree esti-

mates for carcass traits are mated to cows with either high, medium, or low estimates. As this research identifies animals with desirable characteristics, the performance of their offspring will be monitored in the Dixon Springs research herd in future years.

This is the beginning of the second year for this study. How long the study will continue is uncertain but, Ireland believes some exciting data will be available this summer.

"The ability to monitor body temperature on a minute by minute basis from undisturbed animals in a pasture grazing system is exciting," he said. "We haven't done that before. In other



**Frank Ireland, Research Animal Scientist with the Animal Sciences Department at Dixon Springs Research Center, mingles with a herd of cows that are in studies at the center. Ireland hopes to have some exciting data available on body temperature measurements at field days this summer.** Photo by John LaRose, Jr.

studies where we've looked at body temperature of cows on endophyte-infected tall fescue we've measured temperature after the animals were driven to the chutes. We've made the assumption that any elevation in body temperature due to driving the animals was consistent across research treatments.

"With the new system, we will be able to monitor body temperature on a minute by minute basis without disturbing the animals. We will be able to identify whether those animals observed grazing during hotter parts of the day are experiencing any change in body temperature. Along with other data, such as hormone concentrations, we will develop a clearer picture of what is happening to these cows. All of those things are going to be exciting findings from the standpoint of grazing endophyte-infected tall fescue," Ireland said.

"We hope to correlate that data with the relative feed intake data collected on the same animals. Were the animals that were most efficient also the animals that were more tolerant of environmental factors? The answers to those questions are what we hope to find and the data collected at DSAC this summer will be the first of its kind. This is exciting!" he added.

Ireland also is excited about the new undergraduate internship program at Dixon Springs.

"I will have three undergraduate interns that will participate in an 11-week internship at the Dixon Springs Agricultural Center. We're excited about that," he said. "We've identified some tremendous individuals and we hope the hands-on experience working with cattle and forages will give them experience they can't get anywhere else."

In addition to the experiences obtained at DSAC, interns in Animal Sciences and other departments will have an opportunity to view the operations of several agri-businesses, and a diverse selection of Southern Illinois farms.

"We have a tremendous opportunity at Dixon Springs due to the size and scope of the agriculture program to provide an educational opportunity to students and producers," Ireland said. "In addition to the internship program, I'm working with junior colleges in the area to provide an opportunity for their students to gain hands-on experience through conducting laboratories at DSAC."

Short courses on a variety of subjects, such as artificial breeding and grazing management, are frequently conducted at DSAC.

Ireland's excitement at having the youth around was very evident. The new program will be highlighted at field days this summer, particularly, at an evening beef meeting set for 5 p.m. on July 31 at Dixon Springs. There also will be an interdepartmental field day at DSAC beginning at 8 a.m. on Aug. 7. Δ