lambs consuming forage with NT had serum prolactin levels similar to lambs on E- pastures. Preliminary data with beef cattle grazing Kentucky 31 tall fescue Shows weight gain of 0.69 lb. per animal per day with E+ fescue, 1.43 lb. with E- fescue and 1.73 lb. with NT fescue. Forage yield was not significantly different between the endophyte groups. Ergot alkaloid data was 0.0 for E- and NT, while E+ was 836 ppb. Blood prolactin levels for NT and E- remained normal while those for E+ were significantly reduced. This data supports differences in endophyte as a reason for differences in weight gains. In a separate summer survival study conducted in Bermuda grass sod with grazing, NT endophyte had stand survival equal to E+ and better than E-.

In conclusion, the insertion of NT endophyte into tall fescue cultivars provides better animal performance than E+ and summer survival equal to E+ tall fescue.

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Effect of Respiratory Disease on Weight Gain and Infrared Thermal Profiles in Feeder Cattle

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Introduction

Respiratory disease is the most costly disease of feeder cattle, and remains a major, ongoing concern for health care providers and feedlot operators. Currently, rectal temperature, feed intake, and visual appraisal are used to assess an animal's clinical condition and response to treatment. Marked physiological events associated with disease, adaptation to rations, and acute and chronic stress can modify heat loss or alter blood flow to the body surface and change metabolism in underlying muscle tissues. These changes can lead to alterations in the amount of radiant energy lost to the environment. Thermal imaging measures the amount of infrared radiation on the surface of an animal. Scanning animals with an infrared camera could detect changes in radiant energy loss associated with physiological and pathological events resulting from respiratory disease. This study evaluated the effect on performance and radiant energy loss wrought by clinical illness in feeder cattle with acute respiratory disease.

Materials and Methods

For 35 days, 224 British crossbred heifers weighing 525 lb. were evaluated daily for clinical illness. Animals were assigned a clinical score ranging from 0-4 (0=no clinical signs of respiratory disease evident, 1=mild respiratory illness, 4=moribund). Justification for therapeutic treatment for respiratory disease included a clinical score ≥1, accompanied by a rectal temperature of ≥103.5°F. All animals requiring treatment received a standard protocol for respiratory disease. Cattle were returned to their original pen following treatment. Animals identified for re-treatment had clinical scores continuing at ≥1, regardless of rectal temperature, by 48 hours after initial treatment or were observed with a clinical score ≥1, >5 days following initial treatment. Once daily on days 33-35, thermal images were obtained using a short-wavelength, infrared radiometer. Images of each animal were assigned a thermal score of 1-4 (1=coldest, indicative of low-energy loss, 4=hottest, indicative of high-energy loss). Three day average of assigned thermal scores was designated as an animal's thermal profile.

Results and Discussion

Cattle classified as having clinical respiratory disease (sick) within the first 35 days of arrival in the feed yard were 44%. Eight animals died prior to thermal profiling and were not included in the analysis. Data was adjusted for pen effect.

Animals never identified as sick gained significantly (P<0.001) better at 3.16±0.10 SEM lb./day than those identified as sick only once (2.33 ±0.11 SEM lb./day) or as sick more than one time (1.67 ±0.16 SEM lb./day). Individual animal feed efficiency could not be evaluated, as the cattle were fed on a pen basis.

Thermal profiles of cattle not identified as sick were significantly (P<0.01) higher at 2.06 ±0.07 SEM than profiles of animals identified as being sick once (1.78 ±0.09 SEM) or more than once (1.71 ±0.11). Thermal profiles of the two classifications of sick animals did not differ significantly from each other (P>0.05).

Data suggests respiratory disease alters metabolic activity. This was evidenced by reduced weight gain resulting in a lowered radiant energy loss at the body surface. This was detectable using an infrared camera.

Feeding and Watering Behaviors and Bovine Respiratory Disease in Newly Received Feedlot Calves

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Abstract

The study objective was to investigate the association between feeding and watering behaviors and bovine respiratory disease (BRD). Feeding and watering behaviors of 170 newly received calves during the first 57 days on feed (DOF) were observed at a commercial feed yard using an electronic monitoring system. Calves pulled and classified as sick (for BRD) during the 57-d observation period had greater ($P \leq 0.05$) frequency and duration of watering at 4 - 5 DOF than non-pulled or non-sick calves. The pulled, sick calves also had lower ($P \leq 0.05$) frequency and duration of both feeding and watering at 11 - 27 DOF, but had a greater ($P \leq 0.05$) frequency of feeding at 28 - 57 DOF than did non-pulled or non-sick calves. Similarly, calves with a higher percentage of pneumonic lesions at slaughter had lower ($P \leq 0.05$) frequency and duration of feeding at 11 - 27 DOF, but had a higher ($P \leq 0.05$) frequency and duration of feeding at 28 - 57 DOF. Feeding and watering behaviors were associated with clinical BRD, on average. Use of watering behavior at 4 - 5 day DOF might be a useful prognostic indicator; however, there was not an obvious predictive association between clinical BRD in individual calves and feeding and watering behaviors.