BEEF CATTLE RESEARCH UPDATE

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Evaluation of BRD Treatment with Tulathromycin (Draxxin®) in Feedlot Cattle

A recent review noted that morbidity and mortality from bovine respiratory disease (BRD) in newly weaned/received cattle continues to be the most significant health problem facing the US beef cattle industry.[1] Research (2006) from the U.S. Meat Animal Research Center in Clay Center, NE estimated that the economic loss associated with lower gains and treatment cost for BRD infection in a 1,000 head feedlot was $13.90 per animal, not including labor and associated handling costs.[2] Two common antibiotics used to treat BRD are tulathromycin (Draxxin®) and tilmicosin (Micotil®). Researchers at Iowa State University recently reviewed published literature to evaluate the comparative efficacy of Draxxin® and Micotil® for use in treating BRD in feedlot cattle.[3] Their analysis of data combined from 21 high quality manuscripts showed that the use of Draxxin® resulted in approximately a 50% reduction in the risk of re-treatment for BRD compared with treatment with Micotil®.

Pasture vs. Feedlot Receiving Systems

University of Nebraska research (2007) determined the effect of pasture vs. feedlot receiving on morbidity and growth performance of freshly weaned beef calves in two experiments.[4] In experiment 1, three mass medication treatments were evaluated within a pasture receiving system and a feedlot receiving system: 1) control, no medication, 2) Excede® on arrival, or 3) Excede® at revaccination (range of 16 to 27 days post arrival). These researchers used 2,264 freshly weaned steer calves procured from a mixture of ("ranch-direct" and "sale barn" sources. The trial had 12 replications for each treatment (seven feedlot and five pasture replications). In the feedlot receiving system (420 hd), each pen housed 20 hd (388 ft^2/hd) and the steers were fed ad libitum a receiving diet containing (dry matter basis) 33% dry rolled corn, 33% wet corn gluten feed, 33% alfalfa, and 1% mineral supplement containing 135 and 200 mg/steer daily, respectively, of Deccox® and Rumensin®. In the pasture receiving system (1,844 hd), each cool-season grass pasture contained 14 acres and housed 123 steers. Steers on four pasture replications were fed 3 lb/hd daily of wet corn gluten feed plus a mineral supplement containing Deccox® (135 mg/hd) and Rumensin® (200 mg/hd) and cool-season grass. These cattle also received ad libitum hay supplementation. Steers on the other pasture replication received only limited hay supplementation. In this replication, concentrate supplementation was not needed because there was adequate pasture forage. In experiment 2, 1172 hd of freshly weaned "ranch-direct" and "sale barn" sourced calves were randomly assigned to either feedlot pens or pastures. The calves were managed similar to those in experiment 1 except none of the calves received mass medication.

In experiment 1, daily gains were greater for steers received in the feedlot system versus the pasture system (2.36 vs, 1.26 lb/day over 26 to 39 day trials). However, steers received on pasture had a significantly reduced incidence of bovine respiratory disease (BRD) compared with steers received in the feedlot (7.4 vs. 11.0%). In experiment 2, daily gains (28 or 42 day periods) were similar for both pasture and feedlot receiving systems. However, once again the incidence of BRD was significantly lower for pasture vs. feedlot received calves (23 vs. 53%).

In conclusion, the results of these two experiments suggest that receiving calves on pasture improves animal health (reduces sickness) compared with receiving calves in a feedlot. Presumably this occurs because the pasture based system is less stressful on the calves since this environment is more similar to the ranch environment they were raised in.

Similar results were reported in recent New Mexico State University research comparing a low-input pasture backgrounding system with a high-input drylot system during 42 to 45 day backgrounding periods (see January 2008 Beef Cattle Research Update).[5] In this study, during backgrounding, drylot calves gained more weight than pasture calves but feed and total cost was four times greater since these calves were fed a corn/wheat midds based pelleted ration (maximum of 3% of bodyweight) plus 1.5 to 2.5 lb/day of alfalfa hay, whereas, the pasture calves were only supplemented with 1.25 lb/day of a 32% protein cube. During the finishing phase of this New Mexico study, no differences in total daily gains or the proportion of steers treated for sickness were observed. However, drylot steers had a greater death loss than pasture steers (7.6 vs 0%). Pasture steers had a net return advantage of $103/head. This study suggested that the low-input pasture backgrounding system was more profitable than the drylot system during both the backgrounding and finishing phases.

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