NAXCEL® FOR STRESSED STOCKER CATTLE

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Story in Brief

In six 28-day receiving trials, 580 newly received steer calves, bull calves and yearlings were used to evaluate the effects of Naxcel® on the health and performance of stressed stocker cattle. As clinical signs of illness or a body temperature of 104°F or greater developed, the cattle were assigned to a randomized antimicrobial medical treatment of Naxcel® or control. Spectinomycin was used as the control treatment. Daily gains were increased from 1.67 to 1.76 pounds per day in the Naxcel® group and medical treatments required per head were similar in both groups. There was no significant difference in response of treatment after day 3 for the Naxcel® treated cattle (67.7% vs 66.0%) but the treatment group exhibited a statistical difference in response after day 5 (97.3% vs 84.0%). Furthermore a lower mortality rate (2.0% vs 3.0%) was shown among the Naxcel® cattle but the control treated animals had a lower percentage of cattle repulled as sick (11.3% vs 16.5%).

(Key Words: Naxcel®, Antimicrobial, Stressed Stocker Cattle, Medical Treatment.)

Introduction

Typical morbidity ranges from 0 to 100% with an average of 25 to 30% in newly received stocker cattle in Oklahoma. Additionally, 2 to 5% of the calves die of stress related shipping fever-bovine respiratory disease complex (BRD). Producers must be prepared with a complete health program for incoming stocker cattle. Antimicrobial drugs have been demonstrated to be effective in decreasing the effects of bovine respiratory disease. Naxcel® is a recently approved broad spectrum antibiotic of the cephalosporin group for treatment of bovine respiratory disease complex. The objective of this study was to evaluate the effect of Naxcel® compared to spectinomycin on the health and performance of newly received stocker cattle.

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Materials and Methods

Five hundred eighty head of cattle were assembled by order buyers and shipped to Pawhuska, Oklahoma in the spring of 1988. The origin, arrival dates and weight, number of head and transit shrink for each trial are summarized in Table 1. Upon arrival, cattle were weighed individually, ear tagged and assigned randomly in one of eight pens. Water and native prairie hay were provided free choice. On the morning following arrival, individual cattle in each pen were processed as follows:

1. Body temperature and time were recorded.
2. Cattle were vaccinated with IBR-PI 3 (MLV) intermuscularly, Leptospira pomona bacterin, Clostridia chavoei, septicom, novyi and sordellii bacterin and dewormed with Ivomec[a].
3. Cattle with clinical signs of illness and a body temperature of 104°F or greater received antibiotic treatment and sick animals were placed in the hospital pen and healthy animals were returned to their home pen.

As cattle were determined to be morbid, the animals were randomly assigned a medical treatment. The treatment group received a 1 ml per cwt injection of Naxcel®. The control animals received a 10 ml per cwt injection of Spectinomycin.

Table 1. Origin, arrival truck date, number of head, arrival weight and intransit shrink for loads of cattle.

	Origin	Arrival date	Number of head	Arrival wt., lb	Shrink, %
Trial 1	OK	1-22-1988	100	526	7.2
Trial 2	AR	2-06-1988	87	515	7.7
Trial 3	AL	2-28-1988	85	528	4.8
Trial 4	AL	3-13-1988	51	543	7.3
Trial 5	AL	3-20-1988	81	537	7.8
Trial 6	MS	4-16-1988	176	262	4.8

[a]Ivomec, MSD Agvet, Rahway, NJ.

Cattle were checked twice daily for signs of illness. Sick animals were moved to the processing area where body temperature was measured and severity of illness was clinically appraised. If body temperature exceeded 104°F or the animal exhibited clinical signs of illness, the animal was considered sick. Sick animals received a medical treatment based on a specified sequence of antimicrobial drugs. This medical treatment was continued for three days and then was evaluated. If the medical treatment had alleviated clinical symptoms and restored normal rectal temperature, treatment was discontinued. If clinical symptoms and rectal temperature improved but the animal was not determined as well, the treatment was continued for two additional days. If the animal exhibited no improvement to the initial medical treatment, the next drug in the sequence was administered. This process was repeated until a health improvement was detected.

Cattle received free access to prairie hay and were fed 2 lb/day a pelleted feed supplement (Table 2) for the first 21 days. The amount of supplement was decreased to 1 lb/day during days 22 to 28 of the receiving trial.

Least squares analysis of variance was performed on data for all response criteria. Responses to the Naxcel® or control treatments were analyzed using individuals as the experimental unit. The initial models for weight gains, medical treatment, morbidity, and removal due to sickness at day 3 and at day 5 included trial (truck load), medical treatment, and trial by medical treatment interaction as class variables. In models, excluding medical treatment, sources of variation with observed significance levels greater than .20 were removed.

Table 2. Composition of feed supplement.

Ingredient	As Fed, %
Soybean meal	88.97
Cottonseed meal	5.00
Salt	3.94
Dicalcium phosphate	2.75
Vitamin A-30,000 IU/g	.11
Deccox 6%[a]	.18
Vitamin E-50%	.09

[a] Deccox, Rhone - Roulenc, Inc., Monmouth Junction, NJ.

Table 3. Effects of Naxcel® on weight gain, morbidity and mortality in newly received stocker cattle.

Treatment	Control	Naxcel®
Number of head	101	99
Arrival weight, lb	437	437
Daily gain, lb[a]	1.67	1.76
Medical treatments per head[a]	4.6	4.6
Removed as sick, %[a]	11.3	16.5
Response to treatment, day 3%[a]	66.0	67.7
Response to treatment, day 5%[a]	84.0[b]	97.3[c]
Total mortality, %	3.0	2.0

[a] Expressed as least squares means.
[b,c] Means in the same row with different superscripts differ (P<.002).

Results and Discussion

Average daily gains were increased by 5.4% in the Naxcel® group (1.76 vs 1.67 lb) and required similar medical treatments per head as shown in Table 3. Additionally, the cattle receiving the Naxcel® treatment showed little difference in response to treatment following 3 days (67.7% vs 66.0%) but exhibited a significantly higher (P<.002) response to treatment after day 5 (97.3% vs 84.0%). However, the Naxcel® group had more animals removed as sick (16.5% vs 11.3%). Total mortality among the Naxcel® group also declined (2.0% vs 3.0%).

The results of this study showed that the gains and required medical treatments of morbid newly received stocker cattle were not effected by the Naxcel® medical treatment compared to the control group. However, the 16% greater response to treatment (97.3% vs 84.0%) after day 5 in the Naxcel® treated cattle demonstrates a positive benefit. Another advantage of the Naxcel® treatment is that Naxcel® is used under an approved label whereas many of the other medical treatments are used at extra label levels. These benefits are coupled with a cost difference of $2.35 vs $3.50 between Naxcel® and Spectam and a single injection site with Naxcel® compared to multiple sites with other treatments. The above factors, suggest that Naxcel® medical treatment can be both economical and beneficial at least when compared to the other treatments used in this study.