

Kansas Agricultural Experiment Station Research Reports

Volume 0
Issue 1 *Cattleman's Day (1993-2014)*

Article 400

2000

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Recommended Citation

Huck, G.L.; Stokka, Gerald L.; Marston, T.T.; and Falkner, Thomas R. (2000) "Effects of florfenicol metaphylaxis in reducing morbidity and associated performance losses in stressed beef calves," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 1. <https://doi.org/10.4148/2378-5977.1803>

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Effects of florfenicol metaphylaxis in reducing morbidity and associated performance losses in stressed beef calves

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EFFECTS OF FLORFENICOL METAPHYLAXIS IN REDUCING MORBIDITY AND ASSOCIATED PERFORMANCE LOSSES IN STRESSED BEEF CALVES

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Summary

In February, 1998, 191 crossbred steers (885 lb) were used in a 28-day feeding trial to evaluate the effects of florfenicol (Nuflor[®]) on morbidity of newly weaned, lightweight cattle. No clinical signs of illness were observed in either the medicated or control group. No statistically significant differences in daily gain, feed intake, or feed efficiency were observed between treated and nontreated cattle.

(Keywords: Nuflor[®], Metaphylaxis, Intake, Morbidity, Receiving.)

Introduction

Significant transportation stress occurs in most feeder cattle prior to arrival at back-grounding and feedlot facilities. Usually, these stress factors combine to ensure an overgrowth of *Pasteurella haemolytica*, depression of systemic immunity and lung protective mechanisms, and aerosolization of bacteria into the lungs. Nuflor[®] has proven to be a valuable antibiotic for use in the treatment of bronchopneumonia caused by *P. haemolytica* and other organisms in controlled research environments, clinical trials, and field studies. Metaphylaxis involves treating all animals with an antibiotic prior to an anticipated disease outbreak. Preliminary evaluations of Nuflor have been promising; results showed significant reductions in morbidity and mortality. The intent of this study was to further evaluate the utility of Nuflor metaphylaxis in stressed beef calves.

Experimental Procedures

Over a 5-day period, 220 steers were purchased from sale barns in Dodge City and Syracuse, KS, and Burlington, CO, and received into a weaning facility in Southwest Kansas. Cattle had ad libitum access to long-stemmed grass hay upon arrival and during their stay at the receiving facility. Vaccination history prior to purchase was not known. After all cattle had been purchased, they were transported to the Southwest Kansas Research-Extension Center, Garden City, KS. Cattle were vaccinated (Nasalgen[®]; 1cc/nostril); treated for parasites (Totalon[®]; 2.5cc/100 lb); individually tagged; and weighed within 24 hours of arrival. One hundred ninety two steers were selected for the trial. The 14 lightest and 14 heaviest were eliminated. On day 2, cattle designated for the trial were reweighed and either treated with a metaphylactic dose of florfenicol (Nuflor, 6cc/100 lb) or left untreated, then allotted to their respective pens (22 pens, 8 or 9 head per pen, 11 pens per treatment). The 28-day trial began on February 8 and ended on March 7, 1999. Cattle were fed one 70 lb bale of prairie hay per pen on the first 3 days, 1/2 bale per pen on days 4 and 5, and 1/3 bale per pen on days 6 through 8. Approximately 8 lb of a 60% corn silage-based growing diet was fed prior to hay on days 3 and 4, and 12 lb was fed on days 5 through 7; then cattle were stepped up to full feed (60% corn silage, 34% dry rolled corn, 3% soybean meal, 3% mineral supplement) on day 8. Cattle were fed once a day, and bunks were managed so that the entire bunk was empty at

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least once out of every 3 days. One feed call per pen was made each morning.

All animals were observed daily, and individual treatment records were maintained. One steer died from a joint infection (confirmed by postmortem) 2 days before the trial was completed. Feed intakes were adjusted for that pen by subtracting the average intake of a single animal from the total amount of feed fed to that pen prior to the animal's death.

Reported final weight is the average of two scale weights multiplied by .97 (3% pencil shrink). Daily gain and feed effi-

ciency were based on initial unshrunk and final shrunk weights.

Results and Discussion

None of the cattle in this study showed clinical signs of illness during the 28-day experiment, so no conclusions could be made with regard to morbidity reduction. Performance data are shown in Table 1. No significant differences in daily gain or feed efficiency were observed ($P < .05$). Cattle receiving Nuflor consumed 2.9% more feed than controls, but the difference was not statistically significant ($P = .14$).

Table 1. Growth Performance Data of Weaned Untreated Steers or Steers Receiving Nuflor® upon Arrival

Item	Control	Treated	SE
Pens per treatment	11	11	
Head per treatment	95	96	
Initial wt., lb	442.8	441.7	4.69
Final wt., lb	520.8	520.4	5.48
Daily gain, lb	2.79	2.81	.10
Dry matter intake, lb/d	10.1	10.4	.15
Feed/gain	4.65	4.72	.23