

Comparison of the metaphylactic efficacy of gamithromycin, tilmicosin and tulathromycin in beef calves at high risk for BRD

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Introduction

Bovine Respiratory Disease (BRD) continues to be one of the major health concerns in the cattle industry. It is a multifactorial disease typically caused by infection of immune-compromised calves with both viral and bacterial pathogens. The purpose of this study was to compare the metaphylactic efficacy of various antimicrobials in high-risk beef calves.

Materials and Methods

Beef heifers (mean \pm SD weight, 403.7 \pm 27.4 lb; n=579) from southwest Texas that were transported to the Clayton Livestock Research Center (CLRC) in Clayton, NM were identified as being at high risk for BRD. Within a truckload lot, calves were randomly allocated into treatment pens (18 to 20 calves/pen; 30 pens; 3 treatments; and 10 replications/treatment). Each pen was randomly assigned 1 of 3 treatments (tulathromycin at 1.14 mg/lb [2.5 mg/kg]; tilmicosin at 6.05 mg/lb [13.3 mg/kg]; or gamithromycin 2.73 mg/lb [6.0 mg/kg]), and all calves within a pen were metaphylactically treated with the assigned treatment. Calves were fed a typical commercial starter diet for the first 56 to 60 days-on-feed with a step-up ration change at day 28. At the end of the feeding period, calves were weighed and body weights were recorded. Dry matter intake, morbidity, and mortality were recorded by CLRC personnel daily.

Results

The average daily gain (ADG) for calves administered tulathromycin was 0.29 lb (0.13 kg)/d greater ($P < 0.01$) than that for calves administered gamithromycin, and 0.18 lb (0.08 kg)/d greater ($P = 0.09$) than that for calves administered tilmicosin. Tulathromycin-treated calves tended ($P = 0.12$) to have improved feed efficiency, compared with that of gamithromycin-treated calves. The morbidity rate for calves administered tulathromycin (5.2%) was significantly ($P < 0.02$) lower than the mortality rate for calves treated with tilmicosin (14.6%) or gamithromycin (12.79%). Dry matter intake and mortality rate did not differ significantly among the 3 treatments.

Significance

Findings suggested that beef calves at high risk for BRD that, upon feedlot arrival, were metaphylactically treated with tulathromycin had greater ADG and decreased morbidity, compared with those for calves that were metaphylactically treated with tilmicosin or gamithromycin. Results of this study, in conjunction with other randomized control trials, will be helpful for determination of the most effective metaphylactic treatment for minimizing the effects of BRD in high-risk beef calves.