EFFECTS OF USING MICOTIL 300, LIQUAMYCIN 200 OR TERRAMYCIN AS MASS MEDICATION ON RECEIVING STOCKER CATTLE

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Story in Brief

Two field trials were conducted at separate locations in southeastern Oklahoma over the winters of 1994 and 1995. Three-hundred-sixty-six newly received stocker steers were used to evaluate the effect of mass medication on animal health and performance. In Trial 1 182 stocker steers weighing 521 lb were used to determine the effects of Micotil 300® or Liquamycin 200® plus Sustain III® sulfa boluses as mass medications. The study included 113 locally purchased cattle, with the remaining 69 head purchased and shipped from Mississippi. The local cattle receiving LA 200 plus a sulfa bolus gained less than local cattle receiving Micotil or no mass medication treatment (1.13 lb/hd/day vs 1.57 and 1.46 lb/hd/day, respectively). One-hundred-eighty-five stocker steers purchased from five separate area salebarns on separate days were used in Trial 2. No effect of mass medication with Micotil 300® or Liquamycin 200® plus Sustain III® sulfa boluses vs no mass medication was observed. Time of mass medication relative to day of purchase also did not influence animal performance.

(Key Words: Micotil, Liquamycin 200, Sustain III, Mass Medication.)

Introduction

Beef cattle stocker operations are a vital link in the beef production cycle. Stocker operators provide the growing phase between the cow/calf producer and the feedlot. Stocker health is important to the overall performance of cattle. Reducing mortality and morbidity is a goal of the successful stocker operator. The pathogens associated with bovine respiratory disease complex (BRD) may result from the stress associated with handling, selling, and shipping of cattle. Results from a study involving mass medication of Micotil (Galyean et al., 1992) found complete absence of BRD symptoms in calves that received Micotil upon arrival. Calves that were treated with BP-48® (long-acting penicillin) gained less over the 28-day receiving period ($P<.05$) than those with Micotil. Daily gains of controls and calves treated with LA 200 did not differ from gain by calves in the other three treatment groups. In a similar study involving mass medication of stocker cattle with Micotil or no treatment (McCoy et al., 1994) daily gains of all mass medicated calves and of calves

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mass medicated but never treated for BRD during the receiving period were greater than controls. Additionally, fewer cattle died, developed chronic respiratory problems, or required treatment for BRD when mass treated with Micotil.

Stocker operators have long known that preventing disease is more economical than treating sick animals. Mass medication could benefit stocker operators if disease is prevented. The objective of these studies was to determine the effect of mass medication with Micotil 300, LA 200/Terramycin plus Sustain III sulfa boluses on performance of newly received stocker cattle.

Materials and Methods

Trial 1. One hundred eighty-two stocker cattle averaging 521 lb were used. Of these, 113 were purchased at the local auction barn in Antlers, OK, and the remaining 69 were shipped from Mississippi. The locally bought cattle were shipped approximately three miles from the weekly sale barn via gooseneck trailer to the receiving pen. The cattle were purchased from December 8, 1993 through March 16, 1994. These cattle were bought in small lots with a wide range of numbers each week, in the same manner as many groups of stocker cattle are put together in this area of the state. Cattle shipped from Mississippi were received March 11, 1994. All cattle were held in a drylot overnight and worked the following morning. The cattle were castrated, dehorned and vaccinated with Bovasheild 4®, 7 way clostridial, TSV 2® (nasal), Poly-Bac B Somnus®, Piliguard Pinkeye®, and treated with either Ivomec F® or Safeguard® dewormer. The anthelmintic used was determined by availability and was not randomized across treatment groups. The cattle received a numbered ear tag for identification and were randomly allotted to one of three treatment groups: CONTROL cattle receiving no mass medication; LA, receiving the recommended label dose of LA 200 (4.5mL/100 lb of body weight) injected i.m. in the neck area (10mL/site maximum), plus two Sustain III sulfa boluses; and MICOTIL, at label dose of Micotil (1.5 mL/100 lb of body weight) injected s.c. in the neck. After initial processing all sick cattle were pulled and treated by the operation manager as in their normal operation.

Individual sale weights were used on local cattle. Mississippi cattle were individually weighed subsequent to their processing the morning following arrival. After cattle were worked they were turned out on dormant, primarily bermudagrass pasture and supplemented with a half and half mixture of whole corn and alfalfa pellets, along with a good bermudagrass hay on a daily basis. Cattle were later moved to primarily fescue pasture and the corn and alfalfa supplementation continued. Cattle were also provided a 2:1 soybean meal:salt mix ad libitum with Bovatec® (100 mg/lb of feed). Feed intake was not determined but estimated at approximately 1.5 lb/head/day.

On April 21, the trial concluded and all cattle were shipped to Kansas for summer season-long grazing. Prior to shipment all cattle were implanted, dewormed and individually weighed.

Trial 2. Cattle were purchased throughout the winter in small lots from five different salebarns in southeastern Oklahoma on five different days of the week. Cattle were purchased at Antlers (Tuesdays), Idabel (Wednesdays), Atoka (Thursdays), Hugo (Fridays), and Paris, TX (Saturdays). Subsequent to purchase, cattle were rested overnight with hay and water and processed the following morning. Cattle were individually identified and vaccinated for IBR, PI_3, blackleg, lepto, dewormed and dehorned. Mass medication treatments were administered on Wednesday mornings to all cattle received the previous six days. Cattle were blocked according to the day of purchase and randomly allotted to treatments of Micotil (1.5 mL/100 lb of body weight, s.c., neck area), Terramycin (4.5 mL/100 lb of body weight, i.m., neck area) plus two Sustain III sulfa boluses, or a control group receiving no mass medication. Body temperatures were taken at time of mass medication. Sale weights were used as beginning weights for the field trial. Cattle were individually weighed for the final weight measurement.

Trial 1 was conducted December through April, Trial 2 October through February, normally the coldest months of the year with many days of rain and short scattered periods of snow, sleet, or freezing rain. It is during this time that many stocker operators receive cattle and maintain them until the summer grazing period.

Results and Discussion

Trial 1. In locally bought steers, the control and Micotil groups gained significantly better than the LA group (1.46 and 1.57 lb/head/day, respectively, vs 1.13). The effects of administering LA 200 with sulfa boluses had a negative effect on the individual performance of local cattle compared to the control and Micotil groups (Table 1). The reason for the negative effect is unknown. Control and Micotil cattle performed equally well indicating a lack of significant clinical or subclinical illness in these cattle.

In Mississippi cattle, both the LA 200 and Micotil groups tended to gain better than the control group (2.21 and 2.29 vs 1.89 lb/hd/day, respectively) (Table 2).

The number of sick cattle pulled for either group (9 local, 6 Mississippi) or sick repulls (2 local, 0 Mississippi) were insufficient to be considered in the statistical analysis.

Trial 2. No differences in animal performance were found due to mass medication treatment (Table 3), time of mass medication administration relative to purchase, or body temperature at time of mass medication.

The low morbidity rate in all cattle indicates that all cattle in these studies were in relatively good health when received. The mortality rate was zero for the cattle included in both trials. Results suggest that for cattle purchased locally during the winter months, which appear to be in good health, no mass medication may be necessary. Although no clinical signs of BRD were visually apparent in the Mississippi cattle in Trial 1, subclinical symptoms may have been present due to the added stress of longer shipping times.

Literature Cited

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Acknowledgment

The Oklahoma Cooperative Extension Service would like to thank Bill Jackson, the cooperator and owner of the study cattle and his ranch manager, Mark, and bookkeeper, Eulinda, for their time, interest, and efforts in the conduct of this trial. The authors also express appreciation to David Jones, Soper, OK, for his efforts and investments in Trial 2.

Table 1. Effects of mass medication on locally purchased cattle in Trial 1.

Treatment	No.	ADG, lb/day
Control	42	1.46[b]
LA 200 & Sulfa bolus	40	1.13[a]
Micotil	39	1.57[b]

[a,b] Means in the same column with different superscripts differ statistically (P<.05).

Table 2. Effects of mass medication on Mississippi cattle in Trial 1.

Treatment	No.	ADG, lb/day
Control	23	1.89
LA 200 & Sulfa bolus	21	2.21
Micotil	25	2.29

Table 3. Effects of mass medication on locally purchased cattle in Trial 2.

Treatment	No.	ADG, lb/day
Control	67	1.11
LA 200 & Sulfa bolus	54	1.06
Micotil	64	1.17