



Department of Animal and Range Sciences  
CLAYTON LIVESTOCK RESEARCH CENTER

## PROGRESS REPORT

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Effects of Arrival Medication with Micotil on Health and Performance of Beef Steers Received on Irrigated Wheat Pasture<sup>1</sup>

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Our previous research indicated that Tilmicosin Phosphate (Micotil; Elanco Animal Health) is a highly effective medication for newly received, stressed beef cattle. Micotil given as a mass medication to newly received beef steers eliminated symptoms of bovine respiratory disease (BRD) in one study (Progress Report No. 82). Moreover, Micotil administered as either a mass medication or based on rectal temperature at the time of arrival processing decreased the incidence of BRD from approximately 44% in non-medicated calves to approximately 12% in both Micotil treatment groups (Progress Report No. 89). Because these previous studies had been conducted in our feedlot receiving facilities, the present study was designed to evaluate the use of Micotil for beef calves received on irrigated wheat pasture.

One truck load of beef calves (117) was shipped from Tennessee to the Research Center. The calves were in transit for 21.45 hours and experienced a 7.75% shrink from a pay weight of 442 lb. The calves arrived at approximately 6:00 p.m. and were given free access to sudangrass hay and water until processing the next morning. Treatments were applied randomly based on processing order, and included: 1) no arrival medication or 2) Micotil administered at 450 mg/100 lb of body weight (BW). Processing included castration (45.7% bulls) and horn tipping (19%) as needed, identification of each calf with an individual ear tag, vaccination with Bovishield 4 and a clostridial seven-way, treatment for internal (Synanthic) and external (Tiguvon) parasites, and injection with vitamin A/D<sub>3</sub> solution. After processing, all calves were allowed to graze a 60-acre irrigated winter wheat pasture for the duration of the 28-day experiment. Calves were weighed on day 14 of the study, at which time they were revaccinated with Bovishield 4, and again on day 28.

Each day of the trial, the calves were checked (by horseback) for symptoms of respiratory disease (nasal/ocular discharge, depression, anorexia). Calves that displayed symptoms were moved from the pasture to an adjacent working pen where their rectal temperature was measured. If the rectal temperature was  $\geq 103^{\circ}\text{F}$ , calves were treated with antibiotics. Calves that received Micotil at processing were given Naxcel (Upjohn; 1 mL/100 lb of BW; three consecutive days) plus long-acting penicillin (BP-48; Pfizer; first day of treatment only), whereas control calves were given Micotil (450 mg/100 lb of BW) alone or Micotil plus BP-48. The rectal temperature of morbid calves was checked for at least one additional day after the original diagnosis and treatment.

Approximately 1 week after starting the trial, one calf was removed from the pasture because of chronic respiratory disease; this calf subsequently died and his data were deleted before statistical analyses. Twelve heifer calves (approximately 350 lb average BW) grazed the 60-acre experimental pasture in addition to the 116 calves that remained on trial. Available forage (838 lb of dry matter/acre) in the pasture was measured on day 24 of the trial by clipping 17 randomly selected

Table 1. Performance and health of beef steers received on irrigated wheat pasture as influenced by arrival medication with Micotil

Item	Treatment <sup>a</sup>			
	Control	Micotil	SE <sup>b</sup>	OSL <sup>c</sup>
No. of steers	58	58	-	-
Initial BW, lb	422.5	417.9	4.0	NS
28-d BW, lb	498.6	495.7	5.7	NS
Daily gain, lb				
Days 0-14	2.20	2.44	.26	NS
Days 15-28	3.23	3.12	.20	NS
Days 0-28	2.72	2.78	.14	NS
Morbidity				
No. of steers treated	19	7	-	.01
%	32.8	12.1	-	.01

<sup>a</sup> Control = no arrival medication. Micotil = 450 mg of Micotil/100 lb of BW at arrival processing.

<sup>b</sup> Pooled standard error of treatment means.

<sup>c</sup> OSL = observed significance level for treatment differences. NS = non-significant,  $P > .10$ .

quadrats (.1 m<sup>2</sup>). Daily gain data were analyzed as a completely random design with individual steers considered to be the experimental units. Individual morbidity data were analyzed by non-parametric statistical procedures.

Mass medication with Micotil did not affect daily gain at any juncture of the 28-day trial (Table 1). This finding contrasts our previous results with calves received in our feedlot facility, in which Micotil-treated calves (both mass-treated calves and those treated on the basis of arrival rectal temperature) gained faster than control calves during a 28-day receiving period and a subsequent 28-day growing period (Progress Report No. 89). Results most likely reflect the lower percentage of morbid calves (32.8%) among controls in the present experiment compared with a greater percentage of morbid calves (43.6%) in our previous report.

Consistent with our previous feedlot receiving research, administration of Micotil to calves received on wheat decreased the incidence of BRD (Table 1). Nineteen control calves were treated for BRD, whereas only seven Micotil calves required treatment ( $P < .01$ ).

<sup>1</sup> We thank Syntex Animal Health for supplying the Synanthic used in this experiment.

These results confirm our previous findings that Micotil is a highly effective drug for use in arrival medication programs for newly received, stressed beef calves. Although not used in the present experiment, treatment of calves with Micotil based on their rectal temperature at processing seems to be highly effective, and we recommend this approach. Whether applied in a feedlot receiving facility

or on pasture, the effectiveness of Micotil in decreasing BRD does not offset the need for careful observation of calves coupled with sound husbandry and management practices.



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