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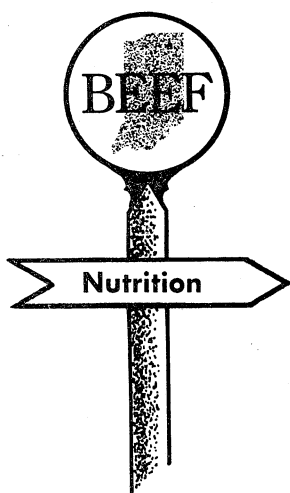
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Value of Aureomycin and Sulfamethazine in Conditioning New Cattle

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Summary

The value of feeding 350 milligrams of either aureomycin or sulfamethazine alone, or in combination, was studied in three shipping fever studies of 28 days each with newly-arrived feeder calves. The cattle were fed their respective drug treatments in 2.0 pounds of soybean meal or of Supplement A along with 2.0 pounds of ground shelled corn and roughage.

The cattle responded to the aureomycin treatment alone or to the combination of aureomycin and sulfamethazine (Table 1). Those administered 350 milligrams of aureomycin per head daily gained 28 percent faster than those which received no aureomycin. Those fed the combination of 350 milligrams aureomycin and 350 milligrams sulfamethazine gained 74 percent more rapidly than those which received neither and 36 percent more rapidly than those administered only aureomycin. Administration of sulfamethazine alone was without effect on gain. No cattle on the combination of aureomycin and sulfamethazine required medical attention; three animals on aureomycin alone, five animals on sulfamethazine alone and eight of the control animals required medical attention.

In another experiment, aureomycin alone was just as effective as a combination of aureomycin and sulfamethazine in stimulating rate of gain. Sulfamethazine alone gave no marked response in gain over those receiv-

ing none. Only one case of shipping fever required medical attention from the group of 80 animals in this experiment.

In a third experiment, there was a 0.3 pound per day response in favor of a combination of 350 milligrams aureomycin and 350 milligrams sulfamethazine per head daily over the control animals receiving no drugs.

Experimental Procedure

Research was conducted to study the response of newly-arrived feeder calves to supplemental aureomycin or sulfamethazine or the two in combination. In all three of the experiments the cattle were shipped from Alpine, Texas to Lafayette, Indiana, and were enroute approximately 30 hours.

Upon arrival at the Purdue University Livestock Research Barn the steers were ear-tagged, individually weighed and allotted to their respective treatments on a gate-cut basis. By this technique, the first calves off the truck were assigned to the control group whereas calves unloaded later in the sequence were assigned to the various treatments in order. This method of assigning the cattle to treatments was pursued to avoid extra handling of the animals.

The levels of medication used were 350 milligrams of aureomycin or 350 milligrams

of sulfamethazine, per steer, daily, or both in combination. The respective drug treatments were mixed into soybean meal or into Supplement A and then fed as a part of the daily ration.

In the first experiment the cattle were to be fed free choice oat straw along with 2.0 pounds of corn and 2.0 pounds of soybean meal per head daily. However, the cattle did not consume the oat straw readily. Therefore, on the fourth day of the experiment, the oat straw was replaced with corn silage, 2.0 pounds dehydrated alfalfa pellets and 5.0 pounds of ground corn cobs. The ground corn cobs portion was gradually dropped from the ration and completely removed by the twelfth day.

The level of drug fed was twice the amount originally planned during the first nine days of the experiment.

In the second experiment, the basal ration was 2.0 pounds of corn, 2.0 pounds of

soybean meal, and a full-feed of corn silage. Three pounds of ground corn cobs per head daily were fed the first 11 days of the experiment.

In the third experiment, a combination of 350 milligrams aureomycin and 350 milligrams sulfamethazine per head daily was compared to no medication. As in the case of the first 2 experiments, the duration of this experiment was 28 days.

A full feed of mixed hay (7 to 8 pounds per day) plus 2 pounds cracked shelled corn and 2 pounds of Supplement A was fed per steer.

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Historic Document

Table 1. Value of aureomycin and sulfamethazine in conditioning new cattle

Item	Unit	Control	350 mg. aureomycin	350 mg. sulfamethazine	Aureomycin plus sulfamethazine
Experiment 1 ^{a/}					
No. animals	no.	27	28	28	28
Initial wt.	lb.	502	479	475	475
Final wt.	lb.	547	537	521	554
Daily gain	lb.	1.61	2.07	1.64	2.82
Daily feed					
Corn	lb.	2.0	2.0	2.0	2.0
Soybean meal	lb.	2.0	2.0	2.0	2.0
Alfalfa meal (Dehy)	lb.	1.8	1.8	1.8	1.8
Roughage ^{b/}	lb.	5.3	5.6	5.2	6.6
Feed/lb. gain (air dry)	lb.	7.0	5.6	6.7	4.3
No. animals treated	no.	8	3	5	0
Experiment 2					
No. animals	no.	20	20	20	20
Initial wt.	lb.	441	416	427	421
Final wt.	lb.	500	493	489	494
Daily gain	lb.	2.11	2.75	2.21	2.61
Daily feed					
Corn	lb.	2.0	1.9	1.9	1.8
Soybean meal	lb.	2.0	1.9	1.9	1.8
Corn silage	lb.	17.8	18.9	17.7	18.3
Corn cobs ^{c/}	lb.	0.9	0.6	0.8	0.6
Feed/lb. gain (air dry)	lb.	6.0	4.2	5.3	4.3
Experiment 3					
No. animals	no.	65			65
Initial wt.	lb.	489			488
Final wt.	lb.	546			553
Daily gain	lb.	2.03			2.34
Daily feed					
Corn	lb.	2.0			2.0
Supplement A	lb.	2.0			2.0
Hay	lb.	7.9			7.2
Feed/lb. gain (air dry)	lb.	5.9			4.7
No. animals treated	no.	4			0

^{a/} During the first 9 days, double the level of drugs was fed.

^{b/} For the first four days all cattle were offered 2.0 pounds of corn, 2.0 pounds of soybean meal and free-choice oat straw. Consumption of the straw was poor. Starting on the fifth day, the straw was not fed; but corn silage plus 2.0 pounds dehydrated alfalfa meal and ground corn cobs were substituted for the oat straw. In calculating feed consumption and feed efficiency, total dry roughage equivalent was calculated.

^{c/} Three pounds of ground corn cobs per head daily were fed only the first eleven days.