RESPONSE OF VARYING WEIGHT GROUPS OF FINISHING PIGS TO ANTIBIOTIC SUPPLEMENTATION

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Summary

Two feeding trials involving a total of 320 head of finishing pigs were used to evaluate the effect of feeding an antibiotic to three groups selected from within a farrowing group. Pigs were divided by weight into group A (heaviest 50%), group B (25-50%) and group C (lightest 25%). Each group was assigned treatments of either 4 weeks of 100 gm of tylan-sulfa followed by 4 weeks of 40 gm/ton of tylan or no antibiotic for the 8-week trial. All groups responded to antibiotic feeding the initial 4 weeks with improved growth rate. The second 4 weeks resulted in a mixed response in that some groups not receiving antibiotic showed a compensatory gain. No group treatment interaction was observed. Eight-week performance of all groups would not indicate any advantage to feeding antibiotic to the finishing pig, regardless of weight.

Introduction

Antibiotics effectively improve growth rate and feed effeciency in starter diets, but the response decreases as the pigs get larger. Previous studies at KSU have indicated that feeding low levels of antibiotic to finishing pigs did not improve average daily gain or feed effeciency. Therefore, the objective of this study was to determine if pigs from within three weight groups of a farrowing would respond differently to antibiotic feeding.

Experimental Procedure

Two groups of finishing pigs were weighed and allotted to treatment groups based on weight. The groups were as follows:

> Group A-Heaviest 50% of the pigs assigned to 4 weeks of Tylan-Sulfa (100-100) followed by 4 weeks of tylan (40 gm/T) or no antibiotic
>
> Group B-Intermediate weight from 25-50%, assigned to 4 weeks of Tylan-Sulfa followed by 4 weeks of tylan (40 gm/t) or no antibiotic.
>
> Group C-Smallest 25% of the group assigned to either 4 weeks of Tylan-sulfa followed by 4 weeks of tylan (40 gm/t) or no antibiotic.

Pigs were housed in a modified open-fronted building with totally slotted floors. Each pen contained a two-hole self feeder and a nipple waterer. The basal diet (15.3% protein, .70% lysine) contained 78.4% sorghum grain, 18.75% soybean meal, 1.0% dicalcium phosphate, 1.0% limestone, .25% salt, .5% vitamin premix and

.1% trace mineral mix. The diets were fed in meal form.

Results and Discussion

In trial 1, pigs in groups A and C receiving antibiotic grew significantly faster than those not receiving antibiotic for the first 4 weeks of the trial (table 1). During the next 4 weeks the pigs in group A grew at the same rate regardless of treatment, however the pigs in group C receiving no antibiotic compensated and grew significantly faster. Consequently, the overall growth rate of both treatments in group C was similar. Group B did not show any response to the feeding of antibiotic.

In trial 2, the pigs fed an antibiotic grew significantly faster than those not fed antibiotics, regardless of groups (table 2). In addition, pigs fed antibiotics were approximately 5% more effecient. During the second 4-week period, pigs in group A continued to grow slightly faster on the antibiotic diet, however, both group B and C pigs not fed antibiotic compensated by growing markedly faster. The compensatory gain the second four weeks in group B and C resulted in no difference in overall performance. In group A, pigs fed the diet containing antibiotic gained slightly faster throughout the eight-week trial.

There was no significant interaction between group and treatment suggesting that the small pigs in a farrowing group did not respond differently than larger contemporaries.

In general, the feeding of antibiotic the first 4 weeks caused a significant increase in growth rate, however the inclusion of a growth promotant level of antibiotic the second 4 weeks resulted in a mixed response. Eight week overall response would not support feeding antibiotic to finishing pigs.

Table 1 Performance of Finishing Pigs With and Without Antibiotic (trial 1)

Item	Group: Antibiotic A +	A -	B +	B -	C +	C -
Initial 4 weeks:						
Avg.da.gain, lbs.	2.04*	1.94	1.83	1.84	1.90*	1.73
Feed/gain	3.42	3.41	3.28	3.24	3.16	3.27
Week 5-8						
Avg.da.gain, lbs.	1.61	1.63	1.56	1.56	1.43	1.58*
Feed/gain	4.29	4.08	4.02	4.02	4.07	4.00
Overall, Week 0-8						
Avg.da.gain, lbs.	1.80	1.78	1.69	1.70	1.67	1.66
Feed/gain	3.85	3.71	3.61	3.58	3.55	3.62

Grp A-4 pens/treatment, 10 pigs/pen, avg. int. wt. 144 lbs.
Grp B-2 pens/treatment, 10 pigs/pen, avg. int. wt. 131 lbs.
Grp C-2 pens/treatment, 10 pigs/pen, avg. int. wt. 118 lbs.
*Significant difference within treatment group.

Table 2 Performance of Finishing Pigs With and Without Antibiotic (Trial 2)

Item	Group: Antibiotic A +	A -	B +	B -	C +	C -
Initial 4 wks.						
Av.da.gain, lbs.	1.96*	1.86	1.88*	1.71	1.66*	1.46
Feed/gain	3.18	3.27	3.04	3.11	2.90	3.25
Week 5-8						
Av.da.gain, lbs.	1.68	1.63	1.54	1.62	1.54	1.72*
Feed/gain	3.99	4.01	3.96	3.74	3.62	3.68
Overall, week 0-8						
Av.da.gain, lbs.	1.82	1.75	1.72	1.66	1.60	1.61
Feed/gain	3.55	3.63	3.44	3.42	3.24	3.47

Grp A-4 pens/treatment, 10 pigs/pen, avg. int. wt. 142 lbs.
Grp B-2 pens/treatment, 10 pigs/pen, avg. int. wt. 128 lbs.
Grp C-2 pens/treatment, 10 pigs/pen, avg. int. wt. 113 lbs.
*Significant difference within treatment group.