

Kansas Agricultural Experiment Station Research Reports

Volume 0
Issue 10 *Swine Day (1968-2014)*

Article 428

1988

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R C. Thaler

Jim L. Nelssen

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Recommended Citation

Thaler, R C. and Nelssen, Jim L. (1988) "An alternative to sulfa-containing antibiotics for starter pigs," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 10. <https://doi.org/10.4148/2378-5977.6268>

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An alternative to sulfa-containing antibiotics for starter pigs

Abstract

An on-farm starter trial was conducted to compare the efficacy of a non-sulfa containing antibiotic (Mecadox®) to that of a sulfa-containing antibiotic (ASP-250®). Two hundred and forty pigs weaned at 3 wk of age were placed in a hot-nursery and all fed a high nutrient density diet containing the antibiotic apramycin (Apralan®) for 1 week. For the next 3 wk, pigs received complex diets containing either ASP-250 or Mecadox. Pigs were then moved to a cold nursery and fed simple diets with the same antibiotic treatment for the final 2 wk. Average daily gain, average daily feed intake, and feed efficiency were unaffected by type of antibiotic used for the overall 2 wk, 3 wk, and 5 wk periods. Therefore, the sulfa-containing antibiotics ASP-250, can be replaced with the alternative feed additive Mecadox without adversely affecting pig performance during an extended starter phase.; Swine Day, Manhattan, KS, November 17, 1988

Keywords

Swine day, 1988; Kansas Agricultural Experiment Station contribution; no. 88-149-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 556; Swine; Starter pig; Antibiotic; Mecadox®; ASP-250®

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K**AN ALTERNATIVE TO SULFA-CONTAINING ANTIBIOTICS
FOR STARTER PIGS¹****S****R.C. Thaler and J.L. Nelssen****U**

Summary

An on-farm starter trial was conducted to compare the efficacy of a non-sulfa containing antibiotic (Mecadox[®]) to that of a sulfa-containing antibiotic (ASP-250[®]). Two hundred and forty pigs weaned at 3 wk of age were placed in a hot-nursery and all fed a high nutrient density diet containing the antibiotic apramycin (Apralan[®]) for 1 week. For the next 3 wk, pigs received complex diets containing either ASP-250 or Mecadox. Pigs were then moved to a cold nursery and fed simple diets with the same antibiotic treatment for the final 2 wk. Average daily gain, average daily feed intake, and feed efficiency were unaffected by type of antibiotic used for the overall 2 wk, 3 wk, and 5 wk periods. Therefore, the sulfa-containing antibiotics ASP-250, can be replaced with the alternative feed additive Mecadox without adversely affecting pig performance during an extended starter phase.

(Key Words: Starter pig, Antibiotic, Mecadox[®], ASP-250[®].)

Introduction

One of the more controversial areas in swine production today deals with sulfa and antibiotic usage. Consumer concern over residues in pork is growing and according to one official from the National Pork Producers Council, it could have an impact on the swine industry 10 times greater than that of the cholesterol issue. One phase in swine production in which antibiotics and sulfas are routinely added to diets is the starter phase. This is due mainly to the young pig's relatively immature immune system. Additions of these feed additives have resulted in consistent improvements in starter pig performance, as well as decreases in piglet morbidity and mortality. The main problem with antibiotics and sulfas in this phase is that residues in the feed mixing system can lead to the contamination of finishing diets. It has been reported that as little as 20 lb of sulfa-containing feed left in a mixer is enough to contaminate a ton of finishing feed. This, in combination with more sensitive sulfa tests being used at packing plants, has greatly increased a producer's chances of having violative levels of sulfa residues found in his finishing hogs. Therefore, in light of the severity of the penalties associated with sulfa violations, a study was conducted to compare a sulfa-containing antibiotic (ASP-250) to a non-sulfa-containing antibiotic (Mecadox) during an extended starter phase.

Procedures

Two hundred and forty pigs weaned at 21 ± 3 day of age were utilized in an on-farm trial. Fifteen pigs were allotted to each of the 16 pens based on initial weight, sex, and ancestry. All pigs were housed in a hot nursery and fed a 1.5% lysine high nutrient density

¹We gratefully acknowledge Keesecker Enterprises, Washington, KS for allowing this study to be conducted on their farm, and Pfizer Inc., Terre Haute, IN, for their support.

diet containing the antibiotic apramycin (Apralan) for the first week of the trial. For the next 3 weeks, pigs were fed a complex diet containing either ASP-250[®] (250 g/ton) or Mecadox (50 g/ton). Pigs were then moved to a cold nursery, housed with the same penmates from the hot nursery, and fed a simple milo-SBM diet with the same antibiotic treatment for 2 wk. There were two nipple waterers per pen with two pens sharing a common feeder. Individual pig weights were obtained weekly on a digital scale sensitive to .1 lb. All feed additions were recorded, and feeders were vacuumed weekly to determine feed consumption.

Results and Discussion

Results from this trial are shown in Table 1. Average daily gain (ADG), average daily feed intake (ADFI), and feed efficiency (F/G) were not affected by antibiotic source for the overall 2 wk, 3 wk, or 5wk periods ($P>.10$). These results suggest that Mecadox can effectively replace sulfa-containing antibiotics during an extended starter phase without adversely affecting performance, while also alleviating the risk of sulfa contamination in other swine diets.

Table 1. Effect of Antibiotic Source on Starter Pig Performance^a

Item	Mecadox	ASP-250
Initial weight, lb ^b	15.57	15.54
Day 0 to 14		
ADG, lb	.71 + .03	.70 + .03
ADFI, lb	.92 + .06	.94 + .03
F/G	1.29 + .05	1.33 + .03
Day 0 to 21		
ADG, lb	.86 + .03	.85 + .04
ADFI, lb	1.30 + .08	1.27 + .07
F/G	1.51 + .03	1.49 + .02
Day 0 to 35		
ADG, lb	.99 + .03	1.01 + .03
ADFI, lb	1.74 + .08	1.72 + .08
F/G	1.76 + .03	1.71 + .02

^aEach value for ADG is the mean + standard deviation for 8 pens per treatment; each value for ADFI and F/G is the mean + standard deviation for 4 pens per treatment.

^bWeight of pigs one week postweaning after Apralan treatment.