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1958

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Recommended Citation

Wahlstrom, Richard C., "Arsenicals for Growing-Finishing Swine" (1958). *South Dakota Swine Field Day Proceedings and Research Reports, 1958*. Paper 9.
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ARSENICALS FOR GROWING-FINISHING SWINE ^{1/}

Richard C. Wahlstrom

The effects of feeding growing pigs the arsenicals arsanilic acid and 3-nitro-4-hydroxyphenylarsonic acid have been reported by several research workers. It has also been suggested that these compounds might decrease the backfat of hogs.

The purpose of this experiment was to compare the response of pigs to the above two arsenicals and also to another arsenical, arsenosobenzene. The effect of these compounds on carcass value, especially backfat thickness, was also determined.

Experimental Plan

Forty-eight weanling pigs with an average weight of 32.5 pounds were allotted as equally as possible into four groups of twelve pigs each. All pigs were housed in concrete floored pens equipped with automatic waterers inside and self-feeders on an outside concrete runway. As each pig attained a weight of 200 pounds it was removed from the experiment and probed for backfat thickness.

The basal rations are shown in table 1. The experimental ration treatments were: control (no supplementation), control plus 45 grams of arsanilic acid per ton, control plus 18 grams of arsenosobenzene per ton and control plus 22.5 grams of 3-nitro per ton.

Table 1 Composition of Basal Rations (Per Cent)

	<u>To approximately 105 lbs.</u>	<u>105 lbs. to 200 lbs.</u>
Ground corn	84.0	91.0
Soybean oil meal	10.0	5.0
Tankage	5.0	2.5
Steamed bonemeal	0.5	1.0
Trace mineral salt	0.5	0.5
B-vitamin supplement	0.1	0.1

Summary of Results

A summary of the gains of the pigs on this experiment are presented in table 2. As several pigs had not attained the weight of 200 pounds, the feed data and carcass data are not included in this progress report.

The pigs fed the rations containing arsanilic acid, arsenosobenzene or 3-nitro all gained at a faster rate than the control pigs from weaning to 105 pounds. During the latter part of the feeding period the control pigs have gained slightly faster, but they still remain lighter than those pigs fed the arsenicals.

^{1/}Presented at South Dakota State College Swine Field Day, September 11, 1958.

Table 2 The Effect of Arsenicals on Growing-Finishing Swine
(May 14 to September 2, 1958)

	Lot 1 Control	Lot 2 Arsanilic Acid	Lot 3 Arsenosobenzene	Lot 4 3-nitro
No. of pigs	12	11 ^a	12	12
Av. initial wt., lb.	32.2	33.4	32.3	32.2
Av. days on test	107	102	107	103
Av. final weight, lb.	182.2	189.1	192.6	189.8
Av. daily gain, lb.				
To 105 lb.	1.15	1.27	1.27	1.33
105 to end	1.87	1.85	1.74	1.75
Entire period	1.40	1.53	1.50	1.53

^a One pig died; data are for eleven pigs.