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Diethylstilbestrol has become a rather common additive in beef cattle rations but has not been effective as a growth promotant in swine rations. Recent research has shown that combining the female hormone diethylstilbestrol (DES) with the male hormone methyltestosterone (MT) improves feed efficiency of pigs fed these rations from a weight of about 120 lb. to market. This experiment was conducted to obtain information on the effect of these hormones on growth, feed efficiency and carcass characteristics of finishing swine.

Procedure

Forty-eight female and 42 castrated male pigs were divided into two replicates on the basis of weight and sex. Pigs were then allotted into 6 lots of 15 pigs each with each lot containing 8 gilts and 7 barrows. Average initial weight of the pigs was 119 and 98 lb. for replicates 1 and 2, respectively. Two lots, one from each replicate, received each of the ration treatments which were:

Basal ration
Basal ration + 2 grams DES and 2 grams MT per ton
Basal ration + 2 grams DES, 2 grams MT and 10 grams Tylosin per ton

The composition of the basal ration is shown in table 1.

The pigs were weighed off of the experiment when they reached an individual weight of 205 lb. or more on the weekly weigh day. They were removed from the test pens and fed the control ration for 72 hours before being marketed.

Carcass data obtained after carcasses had been cooled for approximately 24 hours were carcass length, backfat, percent ham and loin and percent of lean cuts (ham, loin, picnic shoulder and Boston Butt).

Results

Growth performance data are summarized in table 2 and carcass data in table 3. The gains of pigs on all treatments were similar. Pigs in replicate 1 gained 1.83, 1.84 and 1.84 lb. per day and in replicate 2 gains were 1.90, 1.95, and 1.92 lb. per day for pigs fed the basal ration, DES + MT and DES + MT + tylosin, respectively. Pigs receiving the rations containing the hormones consumed less feed daily and required less feed per unit of gain than did the pigs fed the basal ration. Approximately 9% less feed was required by the pigs fed the supplemented rations in replicate 1 and in replicate 2 pigs fed DES + MT required 4.5% less feed and those fed this combination of hormones plus the antibiotic tylosin required 10% less feed.

DES + MT decreased carcass backfat significantly ($P < .05$) when fed alone and highly significantly ($P < .01$) when fed in combination with tylosin. Although other carcass measurements did not differ significantly, there was a trend for leaner carcasses from the pigs fed the hormone containing rations. Ham and loin increased from 40.4 to 40.8 and 41.3% and lean cuts increased from 56.5 to 57.4 and 58.3% when pigs were fed the basal ration, DES + MT and DES + MT + tylosin, respectively.

Summary

Ninety finishing pigs were used in an experiment to study the effect of a dietary combination of diethylstilbestrol (DES) and methyltestosterone (MT) and a combination of DES, MT and tylosin.

Feed efficiency was improved from 4.5 to 10% when DES + MT or DES + MT + tylosin were included in the ration. Carcass backfat was also significantly reduced when these additives were fed. Growth rate was not affected by either treatment.

Table 1. Composition of Ration, Percent (Summer 1968)

	Control
Ground yellow corn	80.00
Soybean meal, 44%	9.47
Dehydrated alfalfa meal, 17%	1.00
Meat meal, 50%	4.00
Wheat middlings	3.00
Fish solubles	1.00
Calcium carbonate	0.60
Dicalcium phosphate	0.30
Salt	0.50
Trace mineral mix	0.08
Vitamin premix	0.05

Table 2. Growth Performance Data of Pigs Fed Hormones (Summer 1968)

	Control	DES + MT	DES + MT + Tylosin
	Rep I		
No. of pigs	15	15	15
Av. initial wt., lb.	118.9	118.9	118.9
Av. final wt., lb.	211.3	211.6	210.1
Av. daily gain, lb.	1.83	1.84	1.84
Av. daily feed, lb.	6.51	6.01	5.99
Av. feed per lb. gain, lb.	3.56	3.27	3.25
	Rep II		
No. of pigs	15	15	15
Av. initial wt., lb.	98.1	98.0	98.1
Av. final wt., lb.	208.7	211.5	211.2
Av. daily gain, lb.	1.90	1.95	1.92
Av. daily feed, lb.	6.24	6.11	5.70
Av. feed per lb. gain, lb.	3.29	3.14	2.96

Table 3. Effect of Hormones on Carcass Characteristics of Swine

	Control	DES + MT	DES + MT + Tylosin
Pigs per treatment	30	30	30
Cold carcass wt., lb.	155.2	157.1	157.0
Av. carcass length, in.	30.6	30.7	30.8
Av. carcass backfat, in.	1.49	1.40*	1.36**
Av. % ham and loin	40.4	40.8	41.3
Av. % lean cuts	56.5	57.4	58.3

* Significantly less than controls ($P < .05$).
** Significantly less than controls ($P < .01$).