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Effect of Testosterone Propionate on Growing Fattening Barrows

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INTRODUCTION

The use of testosterone in different forms has been investigated in various animal species by several research workers. Bergetrand (1)² reported testosterone increased the rate of growth of rabbits. Bogart *et al.* (2) concluded that weekly injections of testosterone into steers and heifers at the rate of 1 mg. per kg. of body weight increased rates of gain and improved efficiency of feed utilization. Burris *et al.* (3) reported testosterone markedly increased the average daily gain of both heifer and steer calves. Woehling *et al.* (4) reported testosterone pellets had no effect on fattening swine.

Sleeth *et al.* (5) found that pigs showed no beneficial effect when injected with testosterone propionate at the rate of 1 mg. per kg. of body weight once each week for 6 weeks, and once every other week thereafter until 115 days had elapsed.

O'Mary *et al.* (6) reported that ewe lambs treated with testosterone averaged 0.48 pound daily weight gain compared with 0.43 pound for the controls. This difference approached significance. These lambs also reached 100 pounds in 62 days while control lambs needed 71.

This paper reports our observations on the effect of testosterone propionate injections on growth and carcass characteristics of growing fattening barrows.

MATERIALS AND METHODS

An experiment was conducted at the Lajas Agricultural Experiment Substation in which groups of weanling barrows, including some littermates, were randomized in two experimental groups.

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² Italic numbers in parentheses refer to Literature Cited, p. 4.

Each of a group of 28 barrows was injected intramuscularly at weaning with a total of 100 mg. of testosterone propionate; 50 mg. into each ham.

The pigs, $\frac{3}{4}$ Duroc \times $\frac{1}{4}$ English Large Black Landrace, were penned in groups of seven or less. A suitable growing-fattening concentrate ration prepared at the substation was fed *ad libitum*.

TABLE 1.—Analyses of variance for weight of testosterone propionate treated and control pigs

Source of variation	Degrees of freedom	Sum of squares	Mean squares	F
<i>At Weaning</i>				
Treatment	1	21.20	21.20	0.46 N. S.
Error	59	2,720.74	46.11	
Total	60	2,741.94		
<i>At 30 Days Post Weaning</i>				
Treatment	1	0.16	0.16	0.80 N. S.
Error	57	11.76	0.20	
Total	58	11.92		
<i>At 60 Days Post Weaning</i>				
Treatment	1	0.00	0.00	0.00 N. S.
Error	57	7.71	0.14	
Total	58	7.71		
<i>At 98 Days Post Weaning</i>				
Treatment	1	0.00	0.00	0.00 N. S.
Error	57	3.92	0.06	
Total	58	3.92		
<i>At 154 Days of Age</i>				
Treatment	1	304.09	304.09	0.42 N. S.
Error	59	42,639.59	722.70	
Total	60	42,943.68		

The experimental period extended for 98 days. The animals were weighed at the beginning of the test and every 30 days thereafter; the last weighing was conducted at the end of the 98 day period. Food consumption was recorded for each group to determine feed efficiency. The rate of gain was computed at 30, 60, and 98 days post weaning. All pigs then were slaughtered for carcass evaluation.

Data were taken for further comparison on carcass weight, backfat thickness, and loin-eye of each pig.

"Off flavor" determinations were conducted on pork samples taken at random and given to various responsible individuals for cooking and testing. These persons were to report on acceptability or unacceptability of the pork.

TABLE 2—Analyses of variance for carcass evaluation of testosterone propionate treated and control pigs

Source of variation	Degrees of freedom	Sum of squares	Mean squares	F
<i>Feed Efficiency</i>				
Treatment	1	248.64	248.64	0.095 N. S.
Error	5	13,039.72	2,607.94	
Total	6	13,288.36		
<i>Loin-Eye Area at the 10th Rib</i>				
Treatment	1	0.12	0.12	0.5 N. S.
Error	45	10.63	0.24	
Total	46	10.75		
<i>Backfat Thickness</i>				
Treatment	1	0.03	0.03	0.5 N. S.
Error	45	3.00	0.06	
Total	46	3.03		
<i>Dressing Percentage</i>				
Treatment	1	0.60	0.60	0.08 N. S.
Error	43	323.40	7.52	
Total	44	324.00		

RESULTS AND CONCLUSIONS

The analyses of variance for weaning weight, the rate of gain at 30, 60, and 98 days respectively, and final weight are presented in table 1. No significant differences were determined, although control pigs were heavier than treated pigs at time of weaning.

Table 2 shows the analyses of variance for feed efficiency, loin-eye area, backfat thickness and dressing percentage.

The uniform acceptability reported on pork from both groups of barrows made further "off-flavor" determinations unnecessary.

It is concluded that a single intramuscular dose of 100 mg. of testosterone

propionate at weaning time does not cause significant effect on growth and carcass characteristics of growing fattening barrows.

SUMMARY

An experiment was conducted at the Lajas Agricultural Experiment Substation to determine the effect of injectable testosterone propionate on growing fattening barrows.

The intramuscular injection at weaning time of 50 mg. of testosterone propionate into each ham caused no significant difference in rate of gain, final weight, feed efficiency, loin-eye area, backfat thickness and dressing percentage. It thus is concluded that a single intramuscular dose of 100 mg. of testosterone propionate at weaning time does not cause any significant effect on growth and carcass characteristics of fattening barrows.

The possible effect of repeated dosages of testosterone propionate at different intervals in fattening barrows was not determined.

RESUMEN

En la Subestación Experimental Agrícola de Lajas se llevó a cabo un experimento para determinar el efecto del propionato de testosterona inyectable en cerditos castrados para engorde.

La inyección intramuscular conteniendo 100 mg. del propionato de testosterona dividido en partes iguales, y aplicada en ambos jamones al destete, no causó diferencia significativa alguna en la razón de ganancia, peso final, eficiencia de conversión del alimento, área del músculo dorsal largo, grosor de la capa de grasa y rendimiento del canal.

Se concluye que la inyección intramuscular de una dosis de 100 mg. de propionato de testosterona no causa efecto significativo alguno en el crecimiento y características del armazón de cerditos castrados para engorde.

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