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THE USE OF ANTIBIOTICS IN PIG FEEDING
MURESK AGRICULTURAL COLLEGE TRIALS
By P. GARSTONE, M.D.A., Pig Husbandry Instructor

DURING recent years some encouraging reports have been received from overseas concerning the feeding of antibiotic supplements in pig rations. In order to test these methods under West Australian conditions a pig feeding trial was conducted at Muresk Agricultural College during the early summer months of 1952-53. The purpose of the tests was to ascertain the effects of feeding antibiotic tablets to pigs from the weaner to the heavy porker stage.

The antibiotic used in this instance was procaine penicillin put up in tablet form and this was fed according to the manufacturer's recommendations.

For the purpose of the tests, three cross bred sows were selected from a litter of 11 pigs which weighed a total of 539 lb. when weaned at eight weeks old. The selected sows were mated to a Berkshire boar when they were 10 months old.

The three sows farrowed within four days of each other and weaned six, ten and eight pigs respectively. The litters averaged 13 lb. per pig at the age of three weeks and had an average weight of 31.1 lb. per pig when weaned at the age of eight weeks.

Four pigs were selected from the litter of six; eight pigs from the litter of 10; and eight pigs from the litter of eight. They were divided into four groups of five, each group containing one pig from the first litter and two pigs from the remaining two litters. Groups 1 and 2 were made as even as possible and had average weights at eight weeks of age of 38.8 lb. and 38.7 lb.

Group 3 was the lightest group with an average of 31.2 lb. and Group 4 averaged 35.2 lb.

BASAL RATION
All groups received a basal ration made up of the following mixture:—

- 86 lb. of crushed wheat.
- 12 lb. of meatmeal.
- 1 lb. limestone.
- 1 lb. salt.
- Vitamin emulsion.

After the first four weeks of the trial meatmeal was decreased to 10 lb. and the grain increased by 2 lb. A decrease of 2 lb. meatmeal and increase of 2 lb. grain was made at four-weekly intervals during the trial.

RESULTS

Group 1.
This group received antibiotics according to the manufacturer's recommendations and had an average weight of 38.8 lb. per pig at eight weeks of age when the trial commenced.

At 21 weeks of age they had an average weight of 139.5 lb. per pig, an average gain of 100.7 lb. They had utilised 3.05 lb. of feed for each 1 lb. of weight gained. The total value of the pigs at the commencement of the trial was £16 5s. 6d. and the total food costs during the trial were £22 17s. 5d.

Their value at the termination of the trial was £60 12s. 10d., showing a margin over feed costs of £21 9s. 11d.

Group 2.
This was the first control group and received no penicillin. In this group the pigs averaged 38.7 lb. at eight weeks and 128.3 lb. at 21 weeks, showing a weight gain of 89.6 lb. per pig over the period. They consumed 3.27 lb. of feed per pig for each 1 lb. of weight gained.

Their total value at the commencement of the trial was £16 3s. 9d.; total food costs were £19 5s. 5d. and the total value of the pigs at the completion of the trial was £57 1s. 10d., showing a margin over feed costs of £21 12s. 8d.
**Group 3.**

This group received penicillin and commenced the trial with an average weight of 31.2 lb. at eight weeks of age. They completed the trial at 21 weeks of age with an average weight of 129.8 lb. per pig giving a weight gain of 98.6 lb.

This group consumed 3.04 lb. of feed for each 1 lb. of weight gain.

Their total value at the commencement of the trial was £13 16s. 10d.; total feed costs were £21 17s. 6d. and the total value of the pigs at completion of the trial was £58 12s. 6d., showing a margin over feed costs of £23 7s. 10d.

**Group 4.**

This group was also a control group receiving no penicillin and commenced the trial with an average weight per pig of 35.2 lb. at eight weeks of age. On the completion of the trial the average had risen to 115.4 lb. showing, a weight gain per pig of 80.2 lb. They consumed 3.27 lb. of food for each 1 lb. of weight gain.

The total value of pigs in this group at the commencement of the trial was £15 1s. 10d.; their total feed costs during the trial were £17 7s. 10d. and the total value of the pigs at completion of the trial was £54 6s. 8d., showing a margin over feed costs of £20 17s. 10d.

**TABULATED RESULTS OF TRIAL**

<table>
<thead>
<tr>
<th></th>
<th>Group 1 (Antibiotics)</th>
<th>Group 2 (Control)</th>
<th>Group 3 (Antibiotics)</th>
<th>Group 4 (Control)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average weight per pig at 8 weeks</td>
<td>38·8 lb.</td>
<td>38·7 lb.</td>
<td>31·2 lb.</td>
<td>35·2 lb.</td>
</tr>
<tr>
<td>Average weight per pig at 21 weeks</td>
<td>139·5 lb.</td>
<td>128·3 lb.</td>
<td>129·8 lb.</td>
<td>115·4 lb.</td>
</tr>
<tr>
<td>Weight gain per pig</td>
<td>100·7 lb.</td>
<td>89·6 lb.</td>
<td>98·6 lb.</td>
<td>80·2 lb.</td>
</tr>
<tr>
<td>Feed consumed for each 1 lb. weight gain</td>
<td>3·05 lb.</td>
<td>3·27 lb.</td>
<td>3·04 lb.</td>
<td>3·27 lb.</td>
</tr>
<tr>
<td>Cost of Antibiotics per pig (procaine penicillin)</td>
<td>6s. 2d.</td>
<td>6s. 2d.</td>
<td>6s. 2d.</td>
<td>...</td>
</tr>
<tr>
<td>Total value of pigs at commencement of trial</td>
<td>£16 5s. 6d.</td>
<td>£16 3s. 9d.</td>
<td>£13 16s. 10d.</td>
<td>£15 1s. 10d.</td>
</tr>
<tr>
<td>Total food costs</td>
<td>£22 17s. 5d.</td>
<td>£19 5s. 5d.</td>
<td>£21 17s. 6d.</td>
<td>£17 7s. 10d.</td>
</tr>
<tr>
<td>Total value of pigs at completion of trial</td>
<td>£60 12s. 10d.</td>
<td>£57 1s. 10d.</td>
<td>£58 12s. 6d.</td>
<td>£54 6s. 8d.</td>
</tr>
<tr>
<td>Margin over feed costs</td>
<td>£21 9s. 11d.</td>
<td>£21 12s. 8d.</td>
<td>£23 7s. 10d.</td>
<td>£20 17s. 10d.</td>
</tr>
</tbody>
</table>

**CONCLUSIONS**

Although the actual monetary gain in Group 1 (which received penicillin) was negligible compared with Group 2 (no penicillin) the results show that in making greater gains (100·7 lb. as compared with 89·6 lb.) the pigs receiving antibiotics utilised their feed more efficiently consuming only 3·05 lb. per pound of weight gain as against 3·27 lb. for the pigs not receiving penicillin.

The performance of Group 3 (receiving penicillin) was particularly impressive since these had a lower average weight than either of the control groups (not receiving penicillin) when the trial commenced, but at the completion of the trial they had a higher average weight than either of the control groups.

In this case Group 3 also showed a gain of £2 10s., or 10s. per pig over Group 4, which must be regarded as a satisfactory result.

**ACKNOWLEDGMENT**

The Muresk Agricultural College wishes to thank Nicholas Pty., Ltd., for their assistance and for providing the antibiotic tablets used in the feeding trials.
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