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B A. Koch

G L. Allee

Robert H. Hines

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## Waxy Endosperm Corn in Growing and Finishing Rations for Swine

B. A. Koch, Gary L. Allee and R. H. Hines

### Summary

Pigs fed rations containing waxy endosperm corn and those fed normal corn responded similarly in digestion and growing trials. Likewise, finishing pigs responded similarly when fed the two corns in digestion and growing trials.

### Introduction

Agronomists are tailoring new varieties of grains to meet specific needs of grain producers and animal feeders. Feeding trials have suggested that cattle and sheep use waxy endosperm corn more efficiently than they do normal corn, but for swine results reported to date have been inconclusive. This study evaluated the performance of pigs fed rations containing waxy endosperm corn or normal corn.

### Procedure

A commercial corn breeder supplied the waxy endosperm corn. Normal corn was secured through usual trade channels.

For 35 days 46 pigs averaging 38 pounds each were fed, in groups of 7 or 8, a ration containing 16% crude protein (corn-soy) and 75% waxy endosperm or normal corn. Pigs were housed on slatted floors in a controlled-environment building. Results are summarized in table 3.1.

At the same time 12 additional pigs of similar weight and breeding to those in feeding trials were held in individual digestion crates. Feed intake, fecal output, and urine output were measured to determine nitrogen digestibility, energy digestibility, and nitrogen retention. Results are summarized in table 3.2.

In a second trial 32 pigs averaging 144 pounds each were fed for 56 days (to an average weight of 220 pounds) on a 14% crude protein (corn-soy) ration containing 81% of waxy endosperm or normal corn. Results are summarized in table 3.1.

Table 3.1. Waxy Endosperm and Normal Corn in Growing and Finishing Rations for Swine.

| Item of Interest             | Waxy endosperm    | Normal            |
|------------------------------|-------------------|-------------------|
| (Growing period - 35 days)   |                   |                   |
| Average initial wt., lbs.    | 37.0              | 38.1              |
| Average daily gain, lbs.     | 1.39 <sup>a</sup> | 1.43 <sup>a</sup> |
| Average feed efficiency      | 2.16 <sup>a</sup> | 2.19 <sup>a</sup> |
| (Finishing period - 56 days) |                   |                   |
| Average initial wt., lbs.    | 143.8             | 143.8             |
| Average daily gain, lbs.     | 1.33 <sup>a</sup> | 1.39 <sup>a</sup> |
| Average feed efficiency      | 3.56 <sup>a</sup> | 3.43 <sup>a</sup> |

<sup>a</sup>Horizontal means with the same superscript do not differ significantly ( $P < .05$ ).

Table 3.2. Digestion Trial Comparing Waxy Endosperm and Normal Corn.

| Diet                | % N <sub>2</sub><br>retained | % N <sub>2</sub><br>digested | % energy<br>digested |
|---------------------|------------------------------|------------------------------|----------------------|
| Waxy endosperm corn | 61.5                         | 84.8                         | 86.0                 |
| Normal corn         | 61.8                         | 84.5                         | 86.0                 |

### Results and Discussion

Growing and finishing pigs fed waxy endosperm corn and those fed normal corn performed similarly. There were no significant differences in growth rate, feed efficiency, nitrogen retention, nitrogen digestibility, or energy digestibility.