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Value of Adding Fat to Finishing
Diets to Alleviate Heat Stress

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Summary

Crossbred barrows, observed at temperatures of 62 and 95°F, were fed either a control or a fat added diet. Pigs housed at 95°F ate significantly less feed, gained slower, and were less efficient than littermates housed at 62°F.

Fat addition to the diet did not significantly influence performance when fed at 62 or 95°F. The addition of fat did not appear to reduce heat stress or improve performance when fed at the higher temperature.

Introduction

The major environmental factor influencing swine performance is temperature. During exposure to heat stress, energy for maintenance increases due to increased energy demands for panting and other methods of heat loss.

Manipulating diet during heat stress, such as by adding fat, might help alleviate the production problems of restricted growth, reduced appetite and reduced feed efficiency. We attempted to determine if fat was beneficial in reducing heat stress.

Procedure

Thirty-two crossbred barrows of similar genetic background were obtained for the study. They averaged 160 lbs. at the start of each trial.

The experiment was divided into two 28 day feeding trials. Temperatures of 62°F and 95°F were studied. Pigs were fed either a control sorghum soy-diet or the control diet with 5% fat added. All pigs were housed at 59°F five days prior to the start of each trial. Temperature and lighting were constant and water and feed were supplied ad libitum. Temperatures were controlled in two environmental rooms (10 ft. x 12 ft.) divided into four equal sized pens with two pigs per pen housed on concrete slatted floors.

Results and Discussion

Table 34. Effect of Temperature and Fat Addition on Performance

| Diet | | Temperature F | |
|------------------|--------------------------|-----------------|-----------------|
| | | 62 ^o | 95 ^o |
| <u>Control</u> | | | |
| | Daily feed intake (lbs.) | 7.00 | 3.54 |
| | Avg. daily gain (lbs.) | 1.81 | .75 |
| | F/G | 3.87 | 4.72 |
| <u>Fat Added</u> | | | |
| | Daily feed intake (lbs.) | 6.84 | 3.49 |
| | Avg. daily gain (lbs.) | 1.78 | .79 |
| | F/G | 3.84 | 4.45 |

Temperature and fat addition effects on performance are shown in Table 34. Pigs housed at 95^oF ate significantly ($P<.01$) less feed and gained significantly ($P<.01$) slower than those housed at 62^oF. Feed to gain ratio also increased at the higher temperature, but the difference was not significant in our study due to relatively few observations.

Adding fat at 62^oF or 95^oF did not significantly influence daily feed intake, daily gain or feed to gain ratio. Though added fat tended to improve feed to gain ratio more at the higher temperature, the difference was not significant.