Performance of Barrows and Gilts in Hoop Structures and Confinement during Winter and Summer

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Introduction

The objectives of the study were to document the performance of barrows and gilts fed in hoops during the summer and winter, and to evaluate barrow and gilt performance in hoops compared with barrows and gilts in a confinement housing system.

Materials and Methods

For each trial, three groups of pigs (barrows and gilts mixed) were placed in three (30 ft x 60 ft) bedded hoop structures (150 pigs per hoop). The fourth group was placed in a mechanically ventilated modular confinement building with slatted floors with six pens (22 pigs per pen). The three hoops and confinement were filled over a three-week period or less. A total of 2,249 pigs were marketed over the duration of the four trials (two summer and 2 winter). The pigs weighed approximately 33-35 lb at the beginning of the trials (Table 1).

The stocking densities for finishing pigs in hoop structures was 12 ft^2 per pig and 8 ft^2 per pig in confinement. With 12 ft^2 per pig, each (30 ft x 60 ft) hoop structure was designed to hold 150 pigs. The confinement pens (13.5 ft x 13 ft) were designed to hold 22 pigs per pen. In the trials, a hoop is defined as a pen. There were three pens of hoop pigs and six pens of confinement pigs for each of the four trials. All pigs were from terminal Duroc boars mated to predominantly white sows.

Pigs were fed five diets in phase ad libitum during the trials. All diets were corn and soybean meal based and were fed in meal form. The hoop structures were operated as cold facilities that used cornstalk bales for deep bedding.

Results and Discussion

The performance of barrows and gilts fed in hoops and confinement for four trials during two years is shown in Table 1. The barrows and gilts grew about 3% faster in hoops than in confinement ($P<.001$). However, the hoop barrows had 7.9% thicker backfat than the confinement barrows, and the hoop gilts had 6.5% thicker backfat than the confinement gilts ($P<.01$). The hoop barrows and gilts had about 1.3 percentage units less calculated lean than the confinement barrows and gilts, respectively ($P<.001$).

An analysis of the performance of the barrows and gilts fed in hoops and confinement for the summer and winter seasons showed that during the summer, pigs fed in hoops grew faster than pigs fed in confinement. During the summer, hoop barrows grew 4.9% faster and hoop gilts grew 4.6% faster than their counterparts in confinement ($P<.001$). During the winter, there were no differences in growth rate ($P>.25$). Also, summer hoop barrows grew 9.1% faster and summer hoop gilts grew 8.3% faster than their counterparts in hoops fed during the winter ($P<.001$). During the summer confinement barrows grew 4.6% faster and confinement gilts grew 4.8% faster than their counterparts in confinement during the winter ($P<.001$).

However, pigs fed in hoops have more backfat than pigs fed in confinement. During the summer, barrows in hoops had 10.6% and gilts in hoops had 11.1% thicker backfat than their counterparts fed in confinement ($P<.001$). Summer hoop barrows had 18.2% thicker backfat and summer hoop gilts had 20% thicker backfat than their counterparts during the winter ($P<.001$). During the winter, the hoop barrows had 5.2% thicker backfat ($P<.05$) than the confinement barrows, but there was no difference between hoop gilts and confinement gilts ($P>.69$). In confinement, the seasonal differential for increased backfat was