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Abstract

The use of hoop barns for feeding finishing pigs has expanded rapidly in Iowa. A recent survey reported over 2,000 hoops used for finishing pigs in Iowa. Extensive work on feeding pigs in hoops has been conducted by Iowa State University researchers. Finishing pigs were fed for 3 years in bedded hoop structures and a confinement building with slotted floors in central Iowa. When summer and winter feeding periods for 3 years were combined, the work showed that the finishing pigs in hoops ate more feed, grew faster, and required more feed per unit of liveweight gain than confinement pigs. Also, the hoop pigs were fatter with smaller loin muscle area and a lower percentage of carcass lean and carcass yield compared with confinement pigs. The efficiency of lean gain also was poorer for the hoop pigs.

Keywords

Animal Science

Disciplines

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Use of Oats in Swine Diets Fed in Deep-bedded Hoop Barns

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Introduction

The use of hoop barns for feeding finishing pigs has expanded rapidly in Iowa. A recent survey reported over 2,000 hoops used for finishing pigs in Iowa. Extensive work on feeding pigs in hoops has been conducted by Iowa State University researchers. Finishing pigs were fed for 3 years in bedded hoop structures and a confinement building with slotted floors in central Iowa. When summer and winter feeding periods for 3 years were combined, the work showed that the finishing pigs in hoops ate more feed, grew faster, and required more feed per unit of liveweight gain than confinement pigs. Also, the hoop pigs were fatter with smaller loin muscle area and a lower percentage of carcass lean and carcass yield compared with confinement pigs. The efficiency of lean gain also was poorer for the hoop pigs.

Because the hoops are cold structures, there were seasonal effects. The hoop pigs ate more feed, particularly in the winter, grew faster in the summer, and were less efficient in the winter than the confinement pigs. The hoop pigs were fatter only in the summer and less efficient in converting feed to lean only in the winter. All of the pigs were fed corn–soybean meal diets. To optimize lean growth, the hoop pigs may need to be fed diets somewhat different than those fed to confinement pigs.

Diets with more fiber, or a lower energy density, may offset the increased feed intake of pigs in hoops and result in leaner pigs. Oats have more fiber and less energy than corn. The objective of this study was to determine the effect of adding oats to the performance finishing diets of pigs in deep-bedded hoop barns.

Materials and Methods

A total of 24 pens of 10 barrows were fed (3 diets \times 4 replications \times 2 seasons). The three diets were control (corn and soybean meal), 20% oats, and 40% oats. The diets were isolysin, based on calculated analysis. Prior to allotment, barrows were fed together in a large, separate-bedded hoop structure and transferred to the test pens in bedded hoops for the trial. Each test pen had one waterer space and two feeder spaces. The pigs were weighed at the beginning and end of the trial and marketed at Farmland, Denison, IA. Carcass information was collected on each dietary treatment group, using separate slaughter summaries from the packing plant.

Results and Discussion

Performance of the pigs fed during the winter is shown in Table 1. The pigs were started on test at approximately 175 lbs and marketed at about 260 lbs. Average daily gain was about 4% slower for pigs fed the oat diets. Average daily feed intake was similar for all diets. The oat-fed pigs used about 5% more feed per unit of liveweight gain. The pigs produced 200 lb carcasses. The pigs fed oats had slightly less backfat, slightly larger loins, and slightly higher percentage of lean in the carcass.

Performance of the pigs fed during the summer is shown in Table 2. The pigs were started on test at approximately 155 lbs and marketed at 270–275 lbs liveweight. Average daily gain was similar for all diets. The pigs fed oats ate 3 to 4% more feed per day. The oat-fed pigs used about 2 to 5% more feed per unit of liveweight gain. The pigs produced 210 lb carcasses. The pigs fed the 40% oat diets had less backfat (6.6% less) and a higher percentage of lean in the carcass.

Conclusion

These results suggest that adding oats to the finishing diets of pigs in hoop structures may produce carcasses with less fat and a higher

percentage of lean. However, feed efficiency will be slightly poorer for oat-supplemented diets. This work will be repeated to verify results.

Table 1. Performance of barrows housed in bedded hoops during winter, fed 0, 20, and 40% oat diets.

<u>Diet</u>	<u>Corn/soy</u>	<u>20% oats</u>	<u>40% oats</u>
Pigs, no.	40	40	40
Start wt, lbs	177.1	175.3	174.7
End wt, lbs	265.2	260.0	259.1
Gain, lbs	88.2	84.7	84.5
Days on test, d	37.5	37.5	37.5
Ave. Daily Gain, lb/d	2.35	2.24	2.25
Ave. Daily Feed, lb/d	9.38	9.42	9.47
Feed/Gain, lb feed/ lb gain	4.00	4.22	4.22
Carcass wt, lbs	203.5	199.3	197.3
Yield, %	75.3	75.2	75.7
Backfat, in.	.83	.82	.81
Loin depth, in.	2.19	2.25	2.22
Lean, %	52.6	53.1	53.6
FFLI, %	48.5	48.5	48.6

Table 2. Performance of barrows housed in bedded hoops during summer, fed 0, 20, and 40% oat diets.

<u>Diet</u>	<u>Corn/soy</u>	<u>20% oats</u>	<u>40% oats</u>
Pigs, no.	40	40	40
Ave. start wt, lbs	155.6	154.4	154.7
Ave. end wt, lbs	274.2	274.6	271.8
Ave. gain, lbs	118.6	120.2	117.2
Days on test, d	56.0	56.0	56.0
Ave. Daily Gain, lb/d	2.14	2.18	2.12
Ave. Daily Feed, lb/d	7.58	7.84	7.90
Feed/Gain, lb feed/ lb gain	3.55	3.62	3.74
Carcass wt, lbs	210.0	210.8	208.8
Yield, %	76.3	75.9	76.7
Backfat, in.	.91	.90	.85
Loin depth, in.	2.20	2.13	2.24
Lean, %	51.4	51.5	52.4
FFLI, %	47.7	47.9	48.4