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Oat-Based Diets for Market Pigs in Deep-Bedded Hoop Barns

Abstract

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 oats in diets on the performance of finishing pigs in deep-bedded hoop barns.

Keywords

Animal Science

Disciplines

Agricultural Science | Agriculture | Animal Sciences

Oat-Based Diets for Market Pigs in Deep-Bedded Hoop Barns

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Introduction

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 oats in diets on the performance of finishing pigs in deep-bedded hoop barns.

Materials and Methods

A total of 24 pens of 10 barrows each were fed (3 diets \times 4 replications \times 2 seasons). The barrows had a start weight of 155–160 pounds and were fed until a market weight of approximately 270 pounds. Table 1 lists the feedstuffs and amounts used for the study. The three diets were control (corn and soybean meal), 20% oats, and 40% oats. The diets were isolysin, based on calculated analysis. Before allotment, barrows were fed together in a separate large, bedded hoop structure and were transferred to the test pens located in bedded hoops for the trial. Each test pen had one waterer space and two feeder spaces. The pigs were weighed every 14 days and were 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 2. Average daily gain and average daily feed intake were similar for all diets. Feed to gain ratio, or feed efficiency did not differ for the three diets. The pigs produced 200-lb carcasses. No differences were found in backfat, loin eye area, lean percentage, or yield.

Performance of the pigs fed during the summer is shown in Table 3. Average daily gain was similar for all diets. There was a numerical trend that the pigs fed oats ate 5 to 7% more feed/day. Feed efficiency was similar for all diets. No differences were found in backfat, loin eye area, lean percentage, or yield.

Several possibilities may explain these findings. They could be due to the use of heavy test weight oats. The oats in this trial had a test weight of no less than 36 pounds/bushel. The use of barrows for the study may have had an impact, because barrows have a capacity to eat larger quantities of feed, coupled with a lower lean gain potential, compared with gilts. Heavy finishing pigs have a larger appetite and lower lean gain capacity than younger pigs. The deep-bedded hoop environment is one in which pigs typically eat more feed. Also, the small pen sizes create less competition for feeder space compared with commercial settings.

Table 1. Composition of diets fed to barrows in hoop barns.

<u>Ingredient</u>	<u>Corn-SBM</u>	<u>20% Oats</u>	<u>40% Oats</u>
Corn	85.53	66.56	47.59
Oats	0.00	20.00	40.00
SBM	12.60	11.60	10.60
Dicalcium phosphate	0.53	0.50	0.49
Limestone	0.74	0.74	0.72
Salt	0.33	0.33	0.33
Vit Min and BMD Premix	0.27	0.27	0.27
<u>Calculated Analysis</u>			
	<u>Corn-SBM</u>	<u>20% Oats</u>	<u>40% Oats</u>
Crude Protein, %	13.08	13.33	13.58
Lysine, %	0.60	0.60	0.60
Ca, %	0.45	0.45	0.45
Available P, %	0.15	0.15	0.15
ME, kcal/kg	3350.84	3210.26	3069.69

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

<u>Diet</u>	<u>Corn/soy</u>	<u>20% oats</u>	<u>40% oats</u>	<u>SEM</u>
Pigs, no.	40	40	40	—
Start wt, lb	159	159	159	3.0
End wt, lb	270	267	272	1.8
Days on test, d	51	51	51	4.0
Avg. Daily Gain, lb/d	2.21	2.16	2.26	0.11
Avg. Daily Feed, lb/d	8.89	9.05	9.15	0.28
Feed/Gain, lb feed/ lb gain	4.04	4.21	4.06	0.10
Yield, %	75.5	75.5	76.0	0.5
Backfat, in.	0.86	0.86	0.84	0.03
LEA, in. ²	6.63	6.70	6.77	0.09
Lean, %	51.9	52.1	52.6	0.4

Table 3. Performance of barrows housed in bedded hoops during the summer, fed 0, 20, and 40% oat diets.

<u>Diet</u>	<u>Corn/soy</u>	<u>20% oats</u>	<u>40% oats</u>	<u>SEM</u>
Pigs, no.	40	40	40	—
Avg. start wt, lb	155	154	154	3.0
Avg. end wt, lb	274	276	274	1.8
Days on test, d	58	58	58	4.0
Avg. Daily Gain, lb/d	2.07	2.12	2.08	0.11
Avg. Daily Feed, lb/d	7.41	7.81	7.95	0.28
Feed/Gain, lb feed/ lb gain	3.60	3.70	3.84	0.10
Yield, %	76.7	76.3	76.8	0.5
Backfat, in.	0.93	0.92	0.89	0.03
LEA, in. ²	6.61	6.59	6.58	0.09
Lean, %	51.4	51.3	51.7	0.4