South Dakota State University
Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange

South Dakota Swine Field Day Proceedings and Research Reports, 1984

Animal Science Reports

1984

Barley in Swine Finishing Diets

G. W. Libal
South Dakota State University

R. C. Wahlstrom

R. Hanson

Follow this and additional works at: http://openprairie.sdstate.edu/sd_swine_1984

Recommended Citation
Libal, G. W.; Wahlstrom, R. C.; and Hanson, R., "Barley in Swine Finishing Diets" (1984). *South Dakota Swine Field Day Proceedings and Research Reports, 1984*. Paper 4.
http://openprairie.sdstate.edu/sd_swine_1984/4

This Report is brought to you for free and open access by the Animal Science Reports at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in South Dakota Swine Field Day Proceedings and Research Reports, 1984 by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.

BARLEY IN SWINE FINISHING DIETS

G. W. Libal, R. C. Wahlstrom and R. Hanson

Department of Animal and Range Sciences

SWINE 84-3

Barley has long been used as a principle energy source in diets for growing finishing swine. Associated with the use of barley instead of corn is poorer feed efficiency due to the higher fiber content of barley. Barley contains more total protein than corn. However, reduction of soybean meal in the diet is limited because of the deficient lysine level in barley. The study reported herein was designed to evaluate diets balanced to be equal in lysine content and ranging in barley content from 0 to 100% of the grain.

EXPERIMENTAL PROCEDURE

Eighty crossbred pigs were allotted to four replications of five treatments with four pigs/pen. Each pen consisted of two barrows and two gilts. The treatments consisted of diets ranging in proportions of corn and barley as the energy sources. The experimental treatments were as follows:

1. 100% corn
2. 75% corn, 25% barley
3. 50% corn, 50% barley
4. 25% corn, 75% barley
5. 100% barley

Composition of the experimental diets is shown in Table 1. It should be noted that proportion of grain and soybean meal changed as the mixture of corn and barley changed to balance the diet to be equal in lysine content.

Initial pig weight averaged approximately 143 lb. Allotment to replications was on the basis of pig weight. Initial weights of replication 1 through 4, respectively, were approximately 155 lb., 145 lb., 140 lb. and 130 lb. The experiment was terminated on an individual pen basis when average weight in the pen was approximately 210 lb. Duration of the experiment for individual pens ranged from 34 to 45 days.

Pigs were housed in the environment-modified confinement building at the South East South Dakota Experiment Farm at Beresford, South Dakota. The trial was conducted during the months of June and July.

RESULTS

A summary of the pig performance is provided in Table 2. Average daily gain ranged from 1.65 to 1.84 lb/day. The highest gain was observed in pens where the pigs received equal proportions of corn and barley in their diet. The poorest gain was seen when pigs were fed diets containing barley at 75% of the grain. These differences were a direct reflection of observed daily feed consumption. These differences among treatment groups were not significant. Feed/gain ranged from 3.23 to 3.43. Differences in these values were also not significant and are very acceptable for pigs during this stage of growth. However, it should be noted that the poorest feed conversion was observed in the diets in which barley made up 75% or 100% of the grain source.

In this experiment, substituting barley for corn up to 100% of the grain portion of the diet during the finishing period, resulted in acceptable performance which did not vary statistically from performance of pigs fed diets where corn was the sole gain sources.

SUMMARY

Eighty crossbred pigs averaging 143 lb. were allotted to diets balanced on a lysine basis and containing barley ranging from 0 to 100% of the grain portion of the diet. During the finishing period to 210 lb, no significant differences in average daily gain, average daily feed or feed/gain were observed.

Table 1. Composition of Experimental Diets (%)

	Diet[a]				
Ingredient	1	2	3	4	5
Ground yellow corn	85.90	65.45	44.28	22.50	--
Ground barley	--	21.80	44.28	67.50	91.50
Soybean meal (44%)	12.00	10.80	9.40	8.00	6.60
Dicalcium phosphate	1.05	1.35	1.00	.95	.75
Limestone	.65	.20	.65	.65	.75
Salt, white	.30	.30	.30	.30	.30
Premix	.10	.10	.10	.10	.10

[a] Calculated to contain .555% lysine, .525% calcium and .515% phosphorus.

Table 2. Effect of Substitution of Barley for Corn on Performance of Finishing Pigs

	Percentage of Grain in Diet				
Corn	100	75	50	25	0
Oats	0	25	50	75	100
Initial wt, lb	142.8	143.0	142.8	143.0	142.9
Final wt, lb	210.3	210.9	214.3	206.8	209.7
Avg daily gain, lb	1.75	1.74	1.84	1.65	1.72
Avg daily feed, lb	5.66	5.72	5.92	5.59	5.89
Feed/gain	3.26	3.29	3.23	3.39	3.43