

**SUBSTITUTING HARD RED SPRING WHEAT FOR BARLEY
IN RATIONS FED TO GROWING-FINISHING SWINE**

North Dakota has a history of being long on wheat and short on hogs. Also, the price of wheat may drop to a point where it is competitive with barley as a feed. With these things in mind, this trial was begun to study the efficiency and economics of using wheat in a growing – finishing ration for swine.

In this trial, conducted in the fall of 1969 and again in the summer of 1970, both barrows and gilts from the station’s purebred Yorkshire herd were allotted to two lots. One lot was fed a 16 percent protein barley-oats-soybean oilmeal ration while the other lot was fed a ration in which 75 percent of the barley was replaced by hard red spring wheat, pound for pound. Both rations were self fed.

Table 8 shows the composition and costs for both rations. Table 9 summarizes data recorded on weights and gains, and Table 10 shows the amount of feed used and cost per hundredweight of gain for both rations.

Table 8. Ration Composition and Feed Cost.

Ration	16% Protein barley-oats ration		75% Wheat ration	
	Pounds per ton	Cost per ton	Pounds per ton	Cost per ton
Oats	570	\$ 9.75	570	\$ 9.75
Barley	1130	20.00	280	4.96
Wheat	-	-	850	21.25
Soybean oilmeal	240	12.84	240	12.84
Di-calcium phosphate	24	1.44	24	1.44
Limestone	24	.60	24	.60
Trace mineral salt	10	.26	10	.26
Fortafeed	2	.46	2	.46
Vitamin A	60 mgs.	.06	60 mgs.	.06
Vitamin D	28 mgs.	.14	28 mgs.	.14
Zinc sulfate	360 mgs.	1.88	360 mgs.	1.88
Grinding	-	2.00	-	2.00
Total		\$49.43		\$55.64

Table 9. Data on Weights and Gains.

Data on:	16% Protein barley-oats ration			75% Wheat ration		
	Winter	Summer	Avg.	Winter	Summer	Avg.
	1969	1970		1969	1970	
Number of pigs per lot	8	10	9	7	10	8.5
Initial weight – lbs.						
Total per lot	595	503	549	522	501	512
Average per pig	74.4	50.3	62.4	74.6	50.1	62.4
Final weight – lbs.						
Total per lot	1754	2076	1915	1511	2067	1789
Average per pig	219.3	207.6	213.5	215.9	206.7	211.3
Gain per lot – lbs.	1159	1573	1366	989	1566	1278
Number of days on feed	101	105	-	101	105	-
Average daily gain – lbs.	1.43	1.50	1.47	1.41	1.49	1.46

Table 10. Feed Used and Cost per Hundredweight for Gain.

Data on:	16% Protein barley-oats ration			75% Wheat ration		
	Winter	Summer	Avg.	Winter	Summer	Avg.
	1969	1970		1969	1970	
Total pounds of feed used per lot	4750	6300	5525	3734	5980	4857
Pounds of feed per hundredweight gain	409.8	400.5	404.5	377.6	381.9	380.2
Cost per hundredweight of gain	\$10.12	\$9.89	\$9.99	\$10.50	\$10.62	\$10.57

Summary

The average of these two trials shows no difference in daily gain between rations. However, feeding wheat in the ration improved feed efficiency by 6 percent. When wheat is valued at \$1.50 per bushel it cannot compete as a feed grain with barley valued \$.85 per bushel. At a loan value of \$1.25 per bushel however, wheat can economically substitute for barley in a fattening ration for swine.

There was no evidence in these trials of a palatability problem when wheat replaced 75 percent of the barley in the ration.