FEEDING HARD RED SPRING WHEAT TO HOGS

Wheat feeding to livestock may become more common as the supply becomes greater and the returns per bushel as a cash crop decline. Wheat as a feed is both high in energy and protein when compared to oats and barley. However, rations composed of straight wheat tend to be more difficult to feed due to its high gluten content.

This trial was designed to compare a ration in which hard red spring wheat would replace 75 percent of the barley in a growing-finishing ration. The two rations are shown in Table 7. Both rations were self-fed in meal form to Yorkshire pigs from about 35 pounds to finish. The trial was conducted in the fall of 1969, summer of 1970, and fall of 1970.

Table 7. Rations Used in Trials Comparing Wheat with Barley and Oats for Fattening Pigs

	Barley-Oats Ration			**75% Hard Red Spring Wheat Ration**	
	lbs. / ton	**cost / ton**		**lbs. / ton**	**cost / ton**
Oats (lbs.)	484	$ 9.64		484	$ 9.64
Barley (lbs.)	1138	$20.14		288	$ 5.10
Hard Red Spring Wheat (lbs.)	----	----		850	$21.26
Soybean oilmeal (lbs.)	238	$10.60		238	$10.60
Di calcium phosphate (lbs.)	24	$ 1.58		24	$ 1.58
Limestone (lbs.)	24	$ 0.60		24	$ 0.60
Trace mineral salt (lbs.)	10	$ 0.26		10	$ 0.26
Vitamin B complex	640 gms.	$ 0.32		640 gms.	$ 0.32
Vitamin A – (20,000 U.S.P. / gm.)	60 gms.	$ 0.06		60 gms.	$ 0.06
Vitamin D_3 – (200,000 I.C.U. / gm.)	28 gms.	$ 0.14		28 gms.	$ 0.14
Zinc sulfate	360 gms.	$ 0.24		360 gms.	$ 0.24
Grinding per ton		$ 2.00			$ 2.00
	2000+lbs.			2000+lbs.	
Cost per ton		$45.58			$51.80

Table 8 shows the results for the three feeding periods.

Table 8. Weights and Gains in Trials Comparing Wheat with Barley and Oats for Fattening Pigs

	Barley-Oats Ration			75% Hard Red Spring Wheat Ration	
Number of pigs per lot:					
Fall, 1969	8			7	
Summer, 1970	10			10	
Fall, 1970	13			13	
Total	31			30	
Initial weight (lbs.):		**Avg.**			**Avg.**
Fall, 1969	595	74.4		522	74.6
Summer, 1970	503	50.3		501	50.1
Fall, 1970	478	36.8		476	36.6
Total weight	1576			1499	
Average / pig		50.84			49.97
Final weight (lbs.):					
Fall, 1969	1754	219.3		1511	215.9
Summer, 1970	2076	207.6		2067	206.7
Fall, 1970	2721	209.3		2635	202.9
Total weight	6551			6213	
Average / pig		211.3			207.1
Gain per lot (lbs.):					
Fall, 1969	1159			989	
Summer, 1970	1573			1566	
Fall, 1970	2243			2159	
Total	4975			4714	
Gain / pig	160.5			157.1	
Number days fed:					
Fall, 1969	101			101	
Summer, 1970	105			105	
Fall, 1970	140			140	
Average daily gain / pig:					
Fall, 1969	1.43			1.41	
Summer, 1970	1.50			1.49	
Fall, 1970	1.23			1.19	
Average	1.39			1.36	
Total feed per lot:					
Fall, 1969	4750			3734	
Summer, 1970	6300			5980	
Fall, 1970	8380			9570	
Total	19,430			19,284	
Pounds feed per hundred pound-gain:					
Fall, 1969	409.8			377.6	
Summer, 1970	400.5			381.9	
Fall, 1970	373.6			443.3	
Average	394.6			400.9	
Cost per hundred pound gain:					
Fall, 1969	$10.12			$10.50	
Summer, 1970	$ 9.89			$10.62	
Fall, 1970	$ 8.51			$11.48	
Average	$ 9.51			$10.87	

Summary

Using hard red spring wheat in hog fattening rations to replace 75 percent of the barley did not improve the rate of gain but did improve feed efficiency two out of the three feeding periods. At the level of wheat fed there did not appear to be any rejection of feed because of lowered palatability.

Feed cost per one hundredweight gain using wheat has averaged $1.36 more than when barley was fed. However, this value was obtained using $1.50 per bushel wheat.

As the price of wheat approaches that of barley, more and more wheat can be channeled as a feed through livestock.

Feed Prices Used in 1971 Livestock Research Roundup

Alfalfa hay	$25.00 / ton	Limestone	$50.00 / ton
Crested-brome hay	$18.00 / ton	Zinc sulfate	$2.99 / lb.
Corn silage	$7.20 / ton	Vitamin A (20,000 U.S.P. / gm.)	$0.50 / lb.
Wheat straw	$10.00 / ton	Vitamin D_3 (200,000 U.S.P. per gm.)	$2.42 / lb.
Wheat	$1.50 / bu.	Vitamin B complex	$0.23 / lb.
Barley	$0.85 / bu.	Terramycin (2 gms. / lb.)	$0.13 / lb.
Oats	$0.55 / bu.	Lyamine 50 (50% lysine)	$0.65 / lb.
Triticale	$0.85 / bu.	DL Methionine 99%	$1.10 / lb.
Soybean oilmeal	$89.00 / ton	Kedlor 230%	$0.14 / lb.
Bone meal	$140.00 / ton	MGA supplement	$4.19 / cwt.
Di calcium phosphate	$132.00 / ton	Plain supplement	$3.29 / cwt.
Trace mineral salt	$52.00 / ton	Grinding, rolling and chopping	$2.00 / ton

Appendix I

The third year of the trial on the effects of worming feedlot heifers with thiabendazole was completed after the report for the Livestock Research Roundup was presented. Complete data for this trial for the three year period are presented in Tables 13A and 14A.

Table 13A. Summary of Data from the Worming Trial with Heifers

	Wormed Lot			
	1969	**1970**	**1971**	**3-Yr. Avg.**
Number of head per lot	10	10	6	26
Avg. initial wt. / head	526.0	521.5	523.3	523.6
Avg. final wt. / head	898.0	911.0	991.7	933.6
Avg. gain / head	372.0	389.5	468.3	409.9
Days fed	213	239	267	239.7
Avg. daily gain / head	1.75	1.63	1.75	1.71
Feed cost / cwt gain	$ 17.88	$ 18.44	$ 16.39	$ 17.57
Lbs. feed / cwt gain	2479	2160	1826	2155
Hot carcass wt. / head	527.1	522.9	584.7	544.9
Avg. dressing percent	58.7	57.4	59.0	58.4
Avg. USDA grade	10.1	9.2	9.5	9.6
Avg. carcass value	$208.63	$239.91	$318.42	$255.65
	Control Lot			
Number of head per lot	10	10	6	26
Avg. initial wt. / head	521.5	521.0	524.2	522.2
Avg. final wt. / head	915.5	922.5	963.3	933.8
Avg. gain / head	394.0	401.5	439.2	411.6
Days fed	213	239	267	239.7
Avg. daily gain / head	1.85	1.68	1.64	1.72
Feed cost / cwt gain	$ 16.99	$ 17.90	$ 17.51	$ 17.47
Lbs. feed / cwt gain	2367	2099	1960	2142
Hot carcass wt. / head	545.4	531.3	567.5	548.1
Avg. dressing percent	59.6	57.6	58.9	58.7
Avg. USDA grade	9.5	9.8	9.5	9.6
Avg. carcass value	$214.08	$247.46	$309.50	$257.01

Table 14A. Rations Fed in the Worming Trial with Heifers

	Wormed Lot					Control Lot			
	1969	**1970**	**1971**	**3-Yr. Avg.**		**1969**	**1970**	**1971**	**3-Yr. Avg.**
Ration lbs. per head per day:									
Alfalfa hay	1.5	2.0	1.9	1.8		1.5	2.0	1.9	1.8
Corn silage	32.7	24.8	20.2	25.9		33.2	24.9	20.4	26.2
Barley	8.9	8.8	9.7	9.1		8.9	8.8	9.7	9.1
Minerals	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2

Summary

Gains of feedlot heifers were not improved by the use of thiabendazole for worming treatment.

There was no significant difference in gain between treatments in any of the three years the trial was conducted.