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TRAILL AND LIBERTY VARIETIES OF BARLEY IN GROWING-FINISHING SWINE RATIONS[1]

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Traill barley is a good malt variety in South Dakota. Cash received per bushel is approximately $1.05 to $1.20 if the barley can be used for malting purposes. However, the price per bushel is much less if the barley has excessive thins, trash, off color kernels, and foreign material and can not be sold as good malting barley. Obviously, barley growers' profits are less if the barley is discounted for poor malting qualities. If barley is generally unsatisfactory for malting, should it be sold on the market at the discounted price, or could it be retained by the grower and profitably fed to livestock? Liberty variety is a good feed barley in South Dakota. The objective of this experiment was to study the relative feeding value of the two barley varieties, Traill and Liberty.

Experimental Procedure

Eighty-four weanling purebred and crossbred pigs were allotted into 7 lots of 12 pigs each on the basis of litter, weight, sex and general appearance. Treatments in the experiment were:

	Grain	Ration form
Lot 1.	Corn	meal
Lot 2.	Corn-Liberty barley (1:1 ratio)	meal
Lot 3.	Liberty barley	meal
Lot 4.	Liberty barley	pellet
Lot 5.	Traill barley, malting quality	meal
Lot 6.	Traill barley, malting quality	pellet
Lot 7.	Traill barley, poor malting quality	pellet

Composition of the rations fed is listed in table 1. The Traill and Liberty barley used in this experiment were grown on the college farm. The poor quality malting barley was purchased at a local elevator for the price of 75 cents per bushel.

The pigs were placed in pasture lots for this experiment. They were self-fed and watered ad libitum. The experiment was concluded before the pigs reached market weight because of bad weather conditions.

Results and Discussion

Growth rate was nearly the same for all lots. The three lots of pigs fed Liberty barley gained as fast or slightly faster than pigs given corn or Traill barley. The quality of the Traill barley (good vs. poor) did not have an effect on growth rate. Pelleting did not consistently increase daily gains.

In general, pigs fed the barley rations required more feed per pound of gain than pigs given corn. One exception to this was pigs fed poor quality Traill barley. Pelleting decreased the feed required per pound of gain 1% and 4.8% in the case of the Liberty and Traill barley, respectively.

1 Certain ration ingredients were supplied by Merck and Co., Rahway, New Jersey, American Cyanimid Co., Princeton, New Jersey, Eli Lilly and Co., Greenfield, Indiana, Nopco Checmical Co. and Calcium Carbonate, Quincy, Illinois.

TABLE 1. COMPOSITION OF RATIONS

Lot No.	1	2	3,4	5,6,7
Crude Protein, actual analysis, %[1]	17.0	17.5	17.8	17.1
	lbs.	lbs.	lbs.	lbs.
Yellow corn, gr.	803	408	---	---
Liberty barley[2]	---	406	825	---
Traill barley[3]	---	---	---	880
Soybean meal (44%)	130	140	130	75
Meat and Bone Scraps (50%)	50	25	25	25
Dicalcium phosphate	4	6	6	6
Limestone	5	6	6	6
T.M. salt, hi zinc	5	5	5	5
Trace mineral (CCC)	0.5	0.5	0.5	0.5
B vitamin mix, Merck 92	0.5	0.5	0.5	0.5
Vitamin B_{12}, Merck 20	0.25	0.25	0.25	0.25
Vitamin A and D, Quadrex 10	0.2	0.2	0.2	0.2
Aurofac 10	1.0	1.0	1.0	1.0
Hygromix 8	0.75	0.75	0.75	0.75

1 Crude protein was higher than calculated. At an average body weight of 110 pounds the protein content of the rations was adjusted to 13%.
2 Analyzed 9.87% crude protein, 42% plump kernels, 5% thins and 2% trash.
3 The good quality Traill barley analyzed 11.94% crude protein, 66% plump kernels, 3% thins and no trash. The poor quality Traill barley was not analyzed, except the grain elevator considered it poor malting quality.

Feed cost per hundred weight gain was the lowest in lots 2, 3 and 7 - approximately 38 cents less than the basal corn ration. The higher breed costs of lots 5 and 6 (good Traill barley) was largely due to the higher price of this barley. Pelleting (lots 4 and 6) increased the feed cost per unit of gain.

Both varieties of barley were profitably fed to growing-finishing pigs. Figuring each 200 pound pig worth $32.00 ($16.00/cwt.), most profits over feed costs were realized in lots 2, 3 and 7 (32.00 - 15.50 = $16.50 per pig). It is estimated that feed cost represents 70 to 75% of the total cost of production.

Of course feed prices change and the price changes will have some effect on the ration cost and quite probably change feed cost per unit of gain.

The prices used were those quoted at the time of the experiment. The feed cost per unit of gain shown in this experiment should not be considered as fixed, and not subject to change.

TABLE 2 RESULTS OF FEEDING CORN AND BARLEY RATIONS TO GROWING-FINISHING PIGS

Treatment	corn	corn barley (1:1)	Liberty barley		Traill barley		
			meal	pellet	good meal	good pellet	poor pellet
Lot No.	1	2	3	4	5	6	7
No. pigs	12	12	12	12	12	12	12
Av. initial wt., lb.	31.2	32.8	31.2	32.4	32.2	31.9	32.8
Av. final wt., lb.[1]	180.7	185.3	181.2	186.4	177.1	174.6	179.3
Av. daily gain, lb.	1.52	1.56	1.52	1.57	1.48	1.46	1.50
Av. daily feed, lb.	4.63	4.80	4.92	5.00	4.90	4.59	4.52
Feed per lb. gain, lb.	3.06	3.09	3.22	3.18	3.31	3.15	3.02
Feed cost/cwt. gain[2]	$8.13	$7.75	$7.75	$8.46	$9.30	$9.63	$7.71

1 Fasting weight. All pigs were without feed for 16 hours before weighing.
2 Prices used/cwt. Shelled corn - $1.90, Traill barley (good) - $2.19, (poor) - $1.67, Liberty barley - $1.67, Soybean meal - $3.75, Meat and Bone Scraps - $4.25, Pelleting - 25 cents.