

## Barley Versus Corn Based Hog Rations

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This test was conducted to determine the production and economic differences between a corn/soy ration and a corn/barley/soy ration. We wanted to see if barley is a viable alternative to corn in a swine grower-finish ration. We were looking for an economic use for the barley that we raise as part of our crop rotation.

The test used 241 head of crossbred barrows. They were all farrowed within a 10-day period and were of a uniform size and body type. They went on test at approximately 65 days of age and 65 pounds. These barrows were from a three-way cross of York boars on Duroc/Chester sows. The test was conducted in bedded barns with concrete lots. The hogs from the two treatments were sold at 240 pounds, in groups of equal numbers. All were marketed on a carcass basis. Last year's test was conducted on pasture, and we only graded about 30 animals that we weren't going to breed in each group.

The two rations were balanced according to amino acids, not just percent protein. Both groups were on a corn/soy ration until they weighed 75 pounds, when the barley group went to 200 pounds of barley per ton. When the pigs reached 180 pounds, barley was increased gradually to 650 pounds per ton, 40 percent of the grain in the ration. Both rations used rolled grain and were prepared and delivered by the local elevator. Both groups of pigs used similar feeders.

As I mentioned, one of the changes we made in this year's test compared to last year was to sell all hogs on carcass merit. This way we were better able to compare carcass differences. This year we also used all barrows instead of gilts, and we raised this year's test on concrete instead of pasture. We also had the grain rolled instead of using a hammer mill. At the conclusion of our test, we learned from other sources that the roller mill is much better for barley. Whereas the hammer mill produces a fair amount of dust, the roller mill yields a more uniform particle size.

In calculating economics, we used \$2.50 per bushel for corn and \$1.95 per bushel for barley. All other ration ingredients were at cost.

Because barley is higher in lysine than corn, we were able to reduce the soybean meal in the barley ration, accounting for some of the cost savings.

For us, the real surprise came in the carcass results. Because of the higher fiber in barley, we were expecting slower gains, more feed per pound of gain, and a fatter carcass. Our results showed no real difference in rate of gain, slightly better feed conversion with barley, and a leaner carcass. There was a \$3.90-per-pig net advantage for the barley ration. Of that, \$1.47 came from carcass premiums. The rest was from lower feed cost and slightly better feed conversion.

At the end of our test we got some useful confirmation from Dr. N.H. Williams, who works for Land 'O Lakes in Fort Dodge. He confirmed that our results were comparable to other research on barley. He told us barrows will work slightly better than gilts on barley and that rolling is much better than a hammer mill. He also said that while pigs in the 52-percent-lean-or-less category will show good improvement on barley, pigs with the really lean genetics generally will not. This relates to how well these lean pigs (and gilts, which tend to be leaner) cope with the additional fiber in barley. Because the genetics for outdoors tends to be less lean than for total confinement, barley is probably a better alternative for hogs raised

Figure 5. Carcass yield and quality in feeding trial. The 1995 trial used barrows, the 1995 trial used gilts.

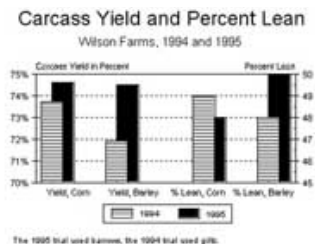


Figure 6. Feed cost and amount per pound of gain. The 1995 trial used barrows, the 1995 trial used gilts.

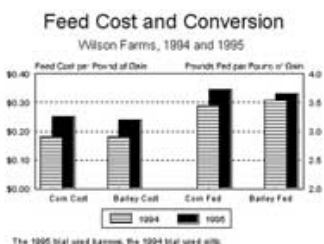
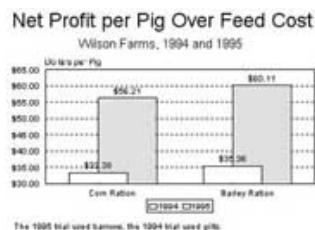


Figure 7. Net after feed costs for barley- and corn-based rations. The 1995 trial used barrows, the 1995 trial used gilts.



outside. The nutritionist stressed the importance of gradually increasing the ration barley as the pigs grow.

In conclusion, we feel that barley is definitely an alternative to corn in a grower/finish swine ration on our farm and probably on many other farms as well.