



## Feeding Wheat to Swine

With the increase in corn and soybean meal costs, many pork producers are looking at alternative feedstuffs to help reduce feed costs. The Hubbard Feeds swine nutrition staff has had an increase in the number of questions regarding the use of wheat in swine diets. This month's Tech-Line will address the most frequently asked questions regarding wheat in swine diets.

### Does wheat make good hog feed?

A simple answer is a resounding **yes**. A summary of 12 trials at 6 different universities compared performance of pigs fed wheat-soybean meal diets with pigs fed corn-soybean meal diets. In all 12 trials where wheat was substituted for corn on an equal weight basis or diets were formulated on equal lysine basis, Average Daily Gain and Feed/Gain were similar between corn and wheat. No differences were observed in carcass backfat or lean percentage. The carcass yield was mixed with some wheat fed pigs having slightly lower yields than corn fed pigs. This past summer wheat became competitively priced with corn and has been used by several producers to extend their corn supply. Because of a difference in bushel weight wheat and corn should be compared on a cost per pound basis. Wheat contains more lysine than corn and is considered to have a value of 105% of corn.

### How does the nutrient profile compare?

Wheat compares favorably with corn as a grain/energy source for pigs. The chart below shows a comparison of wheat and corn for many nutrients important in swine diets.

#### Nutrient Profile Comparison of Wheat and Corn

	<u>Wheat</u>	<u>Corn</u>
Crude Protein %	14.0	7.5
Lysine %	0.36	0.26
Total Phosphorus %	0.35	0.22
Available Phos %	0.12	0.04
Fiber %	2.6	2.5
Met.Energy ME (Mcal/lb)	1.50	1.54
Net Energy (Mcal/lb)	1.10	1.23
Fat %	1.76	3.4

Producers should have a Hubbard nutritionist formulate their diets with wheat or wheat blends to assure that the available amino acids are balanced in the Ideal Protein ratios. The higher available phosphorus in wheat may allow producers to reduce inorganic phosphorus supplementation. Different areas of the country grow different types of wheat. Fortunately, the nutrient profiles of soft red winter, hard red winter, and hard red spring wheat are similar for amino acids and phosphorus. These wheat types will vary slightly in crude protein but this variation is not important for formulating swine diets.

## What are the major concerns when feeding wheat?

Producers should be careful in buying “feed” wheat that has been refused by the flour mill. If the wheat was refused for contamination with wild garlic, it is probably good to use for swine feed. A major reason for discounting wheat is diseased grains, primarily Head Scab. This disease is caused by the fungus *Fusarium graminearum* which produces several mycotoxins that are detrimental to pigs. The primary mycotoxin of concern is deoxynivalenol (DON or vomitoxin). It is not unusual to see diseased wheat with DON levels of 2-8 ppm. DON levels in complete feed above 1.0 ppm will cause severe feed refusal and cause a significant reduction in daily gain. Producers should always check the mycotoxin level of wheat purchased for swine feed. Other mycotoxins produced by *Fusarium sp.* include fusaric acid and zearalenone. Other concerns are test weight and shriveled grains. Wheat with test weight below 54 lbs. per bushel has significantly lower energy value and of course wheat screenings tend to have kernels with higher levels of mycotoxins than normal grains. Producers should not purchase wheat screenings from the flour mills at any price.

## What are some recommendations for feeding wheat?

- Wheat can be included as a single grain source or blended with corn, barley, or sorghum. The inclusion rate for starter pigs is 0-45%; grow-finish pigs is 0-95%; and gestating-lactating sows is 0-90%.
- Wheat can be ground or rolled for swine feeds. The ideal particle size is 800 microns. Wheat ground to flour will cause bridging in feeders and will turn to paste when dampened with water. This can lead to palatability issues. Some producers mix whole grains, wheat and corn, and grind or roll them together.
- Know the mycotoxin status of the wheat and blend with “clean” grain to ensure that the complete diet has less than 1.0 ppm of DON. Make sure the wheat is dry and has a test weight near 60 lbs.

Contact your Hubbard feed representative for additional support in preparing swine diets with wheat or wheat by-products.



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