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## FEED WHEAT IN SWINE RATIONS JUNE 2007

Due to the unusual growing season this year it appears that there will be a lot of feed grade wheat available for swine feed rations if it prices into the diet. Below is a summary of factors to look for as producers decide whether or not to use it.

- Wheat can be used as an energy source for up to 100 % of swine feed diets. However this is dependent on quality and test weight.
- Wheat is equal to milo in energy and slightly lower in energy than corn.
- Wheat is higher in lysine, protein, and phosphorous than corn and milo.
- Depending on the usage rate of wheat in the diet it will require diet reformulation for protein and possibly a base mix change as well.
- Wheat used in swine diets should be processed to 700 microns. Careful attention to processing will keep it from becoming flour which can cause ulcer related issues.
- Pricing of low test weight wheat and / or sprouted wheat can be calculated from the current value of corn and soybean meal. One hundred pounds of wheat has about the same value (energy and protein) as 92 pounds of corn and 8 pounds of 47.5 % soybean meal.
- Lower test weight wheat is generally higher in protein by 1 to 3 percent. Test weight above 50 lbs. has little effect on animal performance.
- Test weight between 45 and 50 lbs. causes a reduction in feed efficiency due to the lower energy content and is about 95 % the value of corn.
- Molds and mycotoxins may be a concern particularly during storage. Care should be taken to insure that the moisture content is low enough for storage.
- Molds can reduce palatability, intake, performance, and adversely affect pregnant animals.
- Any wheat that appears to show mold on the kernels should be sent to the lab for testing.
- Prior to feeding damaged wheat it should be tested for protein and test weight. If in doubt mycotoxins.
- Damaged wheat used for feed generally will not be more than 40 % of any swine diet.

### Effect of sprouting on nutrient characteristics of wheat

	Non - Sprouted	Sprouted
Bushel Wt. Lbs.	60.4	55.9
Crude Protein %	12.32	13.16
Fat %	0.79	0.88
Crude Fiber %	3.22	3.57

Murray & Huber 1968



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**Effect of test weight of hard red winter wheat on performance of finishing swine.  
Wheat test weight, lb.**

Item	59	51	45
ADG Lb. / Day	1.78	1.79	1.81
ADFI Lb. / Day	6.53	6.98	7.16
Feed:Gain	3.67	3.91	3.97

Hines & Pollman, 1982

**Typical nutritive values for wheat, corn, and sorghum grain.**

	Wheat	Sorghum Grain	Corn
Crude Fiber %	2.6	2.2	2.5
Met. Energy kcal/lb.	1475	1475	1550
Calcium %	.05	.02	.02
Phosphorous %	.30	.27	.25
Crude Protein %	12.20	8.90	8.50
Lysine %	.38	.22	.24
Tryptophan %	.17	.09	.09
Theronine %	.37	.27	.32
Methionine & Cystine %	.50	.29	.40

Oklahoma State University

**Relative Feed Value Estimates for Swine**

	Corn	Milo	Wheat
<b>Soymeal 47.5 % @ \$240.00 / ton &amp; Monocal 21.5 % @ \$ 390.00 / ton</b>			
5.00 ( 2.80 )	6.82	7.00	<b>6.68</b>
5.50 ( 3.08 )	7.18	7.37	<b>7.08</b>
6.00 ( 3.64 )	7.54	7.75	<b>7.48</b>
6.50 ( 3.64 )	7.90	8.12	<b>7.88</b>
7.00 ( 3.92 )	8.26	8.50	<b>8.28</b>
7.50 ( 4.20 )	8.61	8.87	<b>8.68</b>
8.00 ( 4.48 )	8.97	9.25	<b>9.08</b>
8.50 ( 4.76 )	9.33	9.62	<b>9.48</b>
9.00 ( 5.04 )	9.69	10.00	<b>9.88</b>
9.50 ( 5.32 )	10.05	10.38	<b>10.28</b>
10.00 ( 5.60 )	10.41	10.75	<b>10.68</b>

Source: Pork Industry Handbook 2007



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**Relative feed values are expressed in per cwt. values due to the difference in standard bushel test weights. Column 1 is the corn price per cwt. & ( per bu. ) Columns 2, 3, & 4 show the relative feed values of corn, milo, & wheat using book values for energy, lysine, and phosphorous. Energy, lysine, & phos. Levels used in the equation were for a Grower 3 diet. This table also assumes 60 lb. test weight wheat. Feed grade wheat will have to be discounted accordingly based on test weight.**