



Rye Grain in Swine Diets ¹

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Rye is not as palatable to swine as other grains and seems to have a growth-depressing effect when fed at high levels. For best results, rye should be mixed with other grains and should not compose more than 25% of the diet. Still, rye is considerably higher in both protein and lysine than corn, which can result in some savings of protein supplement. Table 1 shows example diets formulated with rye. Table 2 compares nutrient composition of rye and corn. Rye should be ground for use in swine diets. A medium to coarse grind is preferred.

Research conducted at the University of Florida indicates that rye ('Wesser') grown in the Southeast has about 90% of the energy content of corn for growing-finishing swine fed from 50 lb to market weight. Interestingly, this research found that growing-finishing swine that were fed diets containing rye demonstrated better response to dietary antibiotic supplementation than pigs fed corn-based diets. Producers who wish to feed rye at high dietary levels (>25%) might consider the inclusion of an antibiotic premix in the diet.

Rye is highly susceptible to contamination by a fungus called ergot. Ergot can reduce feed consumption and cause reproductive problems in sows. Ergot infestation is not usually a problem in

the Southeast because it primarily affects rye grown in cool, wet regions.

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Table 1. Example swine diets using rye.^a

	Grower (50 to 120 lb)	Finisher (120 lb to Market)
Ingredient, lb/ton		
Ground corn or grain sorghum	1100	1255
Ground rye	500	500
Soybean meal (44%) ^b	350	200
Base mix ^c :		
Dicalcium phosphate ^d	22.5	15
Ground limestone	17.5	20
Salt	5	5
Vitamin-trace mineral premix ^e	5	5
Total	2000	2000
Calculated composition (as-fed basis):		
Crude protein, %	15.6	13.0
Lysine, %	.77	.57
Calcium, %	.65	.60
Phosphorus, %	.55	.45
Metabolizable energy, kcal/lb	1415	30
<p>^aNote: When using a commercially available complete protein-vitamin-mineral supplement, assume rye to be equal to corn in protein (or lysine) content; decreasing the amount of complete supplement to take advantage of the higher lysine or protein content of rye would reduce the essential minerals and vitamins that these supplements provide in the diet.</p> <p>^bCan replace 10 lb of 44% soybean meal with 9 lb of 48% soybean meal and 1 lb of grain.</p> <p>^cA complete mineral-vitamin premix or a complete mineral premix and separate vitamin premix can be substituted for the suggested base mix. Follow manufacturer's guidelines.</p> <p>^dDefluorinated phosphate or mono-dicalcium phosphate, if available, may be substituted for dicalcium phosphate. However, if a substitution is made the diets need to be reformulated, since these products contain calcium and phosphorus levels different than dicalcium phosphate.</p> <p>^eAmounts shown are typical for many commercial products. Follow the manufacturer's guidelines.</p>		

Table 2. Comparative nutrient composition of rye and corn (as-fed basis).

Nutrient	Rye	Corn
Crude protein, %	11.8	8.3
Lysine, %	.38	.26
Crude fiber, %	2.8	2.5
Calcium, %	.06	.03
Phosphorus, %	.33	.28
Metabolizable energy, kcal/lb	1390	1550