

Feed Cost Savings of Dried Distillers Grains in Finishing Hog Rations

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Expansion of ethanol production is occurring rapidly generating considerable discussion regarding the ability of numerous affected parties to respond and adjust to changes in associated markets. Among these discussed adjustments is the ability of livestock producers to incorporate ethanol by-products in their feed rations in an attempt to off-set increasing feed costs associated with higher corn prices. This short article is designed to provide producers information regarding feed cost savings of incorporating dried distillers grains (DDGS) in finishing hog rations.

Ration Substitution and Diets Assumed

A commonly recommended substitution by animal scientists for incorporating dried distillers grains plus solubles (DDGS) into swine finishing diets is to add DDGS and limestone and reduce corn, soybean meal, and Dicalcium phosphate. More specifically, to develop a ration with a 10% DDGS inclusion rate, producers are advised to add 200 lbs of DDGS and 3 lbs of limestone and remove 177 lbs of corn, 20 lbs of 44% soybean meal, and 6 lbs of Dicalcium phosphate per ton of feed. For a 20% DDGS inclusion rate (which is a common ceiling on recommended inclusion rates for finishing diets), producers would simply double these substitution amounts. Interested readers are referred to recent work at the University of Minnesota (http://www.iowacorn.org/forms/DDGSpaper_swine.pdf) on which these substitutions are based. Table 1 presents three example diets (on a lbs per ton basis) utilizing these substitutions.

Table 1. Diet Composition of example rations containing 0%, 10%, and 20% DDGS

Ingredient	lbs/ton	lbs/ton	lbs/ton
Corn	1463	1286	1109
DDGS	0	200	400
Soybean Meal	482	462	442
DiCal Phosphate	24	18	12
Limestone	14	17	20
Salt	6	6	6
Lysine	3	3	3
Vitamin/Mineral premix	8	8	8
TOTAL	2000	2000	2000

Feed Cost Impacts

Utilizing the competing rations presented in Table 1 it is straightforward to identify the cost savings available to producers at alternative input prices and by-product inclusion rates. Tables 2 and 3 presents the cost savings (\$/ton) of incorporating 10% and 20%, respectively, DDGS in rations fed to hogs from 60 lbs to finishing weights of 260 lbs assuming a 3.2 feed-to-gain ratio. Furthermore, assumed prices not directly presented in tables 2 and 3 include \$200/ton, \$0.15/lb, and \$0.05/lb for soybean meal, Dical phosphate, and limestone, respectively.

Table 2. Cost Savings (\$/ton) of Incorporating 10% DDGS (Relative to 0% Inclusion)

DDGS (\$/ton)	Corn (\$/bu.)						
	\$ 2.00	\$ 2.50	\$ 3.00	\$ 3.50	\$ 4.00	\$ 4.50	\$ 5.00
\$ 50	\$ 4.85	\$ 6.71	\$ 8.57	\$ 10.43	\$ 12.29	\$ 14.15	\$ 16.01
\$ 75	\$ 2.08	\$ 3.94	\$ 5.79	\$ 7.65	\$ 9.51	\$ 11.37	\$ 13.23
\$ 100	- \$ 0.70	\$ 1.16	\$ 3.02	\$ 4.88	\$ 6.74	\$ 8.59	\$ 10.45
\$ 125	- \$ 3.48	- \$ 1.62	\$ 0.24	\$ 2.10	\$ 3.96	\$ 5.82	\$ 7.68
\$ 150	- \$ 6.26	- \$ 4.40	- \$ 2.54	- \$ 0.68	\$ 1.18	\$ 3.04	\$ 4.90

Table 3. Cost Savings (\$/ton) of Incorporating 20% DDGS (Relative to 0% Inclusion)

DDGS (\$/ton)	Corn (\$/bu.)						
	\$ 2.00	\$ 2.50	\$ 3.00	\$ 3.50	\$ 4.00	\$ 4.50	\$ 5.00
\$ 50	\$ 9.71	\$ 13.43	\$ 17.14	\$ 20.86	\$ 24.58	\$ 28.30	\$ 32.02
\$ 75	\$ 4.15	\$ 7.87	\$ 11.59	\$ 15.31	\$ 19.03	\$ 22.74	\$ 26.46
\$ 100	- \$ 1.40	\$ 2.31	\$ 6.03	\$ 9.75	\$ 13.47	\$ 17.19	\$ 20.91
\$ 125	- \$ 6.96	- \$ 3.24	\$ 0.48	\$ 4.20	\$ 7.91	\$ 11.63	\$ 15.35
\$ 150	- \$ 12.51	- \$ 8.80	- \$ 5.08	- \$ 1.36	\$ 2.36	\$ 6.08	\$ 9.80

Tables 2 and 3 reveal that the value of DDGS to operations feeding slaughter hogs varies depending on the price of DDGS, price of corn, and the DDGS inclusion rate being considered. Some example interpretations may be useful. For instance, table 2 suggest that feed cost can be reduced by approximately \$2.10/ton by feeding a ration including 10% DDGS when DDGS can be delivered for \$125/ton and corn is available for \$3.50/bu. Likewise, a ration of 20% DDGS may save \$4.20/ton at the same DDGS and corn prices. In general, tables 2 and 3 demonstrate that the value (cost savings) of DDGS in finishing rations increases as corn price increases and decreases as DDGS price increases.

Care should be taken in direct utilization of the values presented in tables 2 and 3. In particular, these tables assume delivered prices and 3.2 lbs Feed/Gain. Furthermore, the tables assume that utilization of DDGS has no impact on carcass composition, days on feed, total feed intake, or changes in other costs such as manure handling. Each of these issues are a point of current research and will be further understood in the future. Given the current state of knowledge producers should be aware that some of these issues are still not known with certainty and may vary based upon unique production situations.

Final Points

Producers feeding finishing hogs are increasingly looking for ways to manage increasing feed costs. This article presents an overview of feed cost savings that may be available by utilizing dried distillers grains in designing rations.