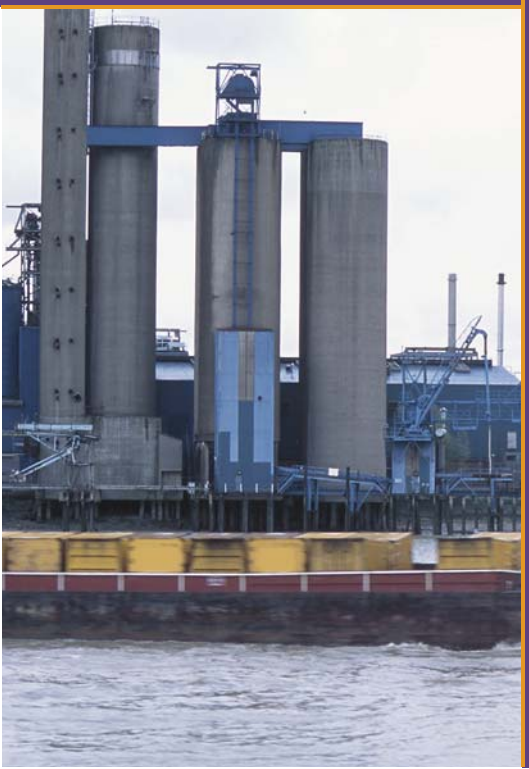

Distillers Grain Market Development & Price Risk Management Series FS4

Distillers Grain Industry Price Discovery & Risk Management

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Background

The distillers grain (DG) industry developed rapidly nearly quadrupling in output from 2003 to 2008 as ethanol production increased dramatically. As with any market that evolves quickly, methods to discover prices are still developing. For a number of reasons, the DG market is somewhat thinly traded and has limited information available about prices and market supply and demand fundamentals. The DG market tends to be a localized market for many ethanol plants, especially those that produce wet DG that is costly to transport long distances. Readily available DG pricing information is limited because many DG transactions are private treaty between the seller and buyer. Therefore they are not reported to the U.S. Department of Agriculture or other parties or published in public price reports. Furthermore, formula pricing of DG using other commodity markets is also common resulting in limited cash negotiated pricing.

DG prices have become an important part of ethanol plant profitability as margins in the DG industry have narrowed over the past few years. In addition, as DG production has increased, its importance as an ingredient in livestock feeds has escalated. At the same time as DG has increased in importance for both ethanol plants and livestock producers, its price has seen substantial volatility. In order for the DG market to further develop, become more widely understood, and increase in overall price discovery efficiency, more information is needed about how DG prices are discovered and risk management methods being used by DG merchants. The purpose of this fact sheet is to better understand the nature of DG price and value discovery, pricing methods, risk management techniques being used, and opportunities for development of additional price discovery methods.

Survey Methods and Respondents

To accomplish the objectives of this study, in July 2009, a survey of ethanol plants and distillers grain merchandisers was conducted to determine the importance of distillers grain to ethanol plant profitability, the DG price discovery process, and mechanisms used to manage price risk in the distillers grain industry. The surveys were conducted via a combination of telephone calls and email. Ethanol plants listed on the Renewable Fuels Association web site were asked to participate. Plants that produced less than 10 mgy were excluded as were plants that used a feedstock other than corn or milo. In total, 171 plants were asked to participate and 125 completed surveys were received yielding a response rate of 73%. Plants were asked questions regarding their merchandising, exporting, transportation, pricing and risk management of distillers grain.

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Survey respondents were producing a total of 7.5 billion gallons of ethanol per year, representing 65% of total industry production as of July 2009. Almost all of the respondents (96%) were dry milling plants. Dried distillers grain was the most widely produced co-product with 106 of the plants producing dried distillers grain, 79 plants producing wet distillers grain and 37 plants producing modified wet distillers grain. The average ethanol production of respondents was 62.3 million gallons of ethanol per year (mgy).

Distillers Grain Importance to Plant Profitability

Plants were asked to rate the importance of DG to plant profitability on a scale from 1 to 5, 1 being not important to 5 being very important. Of the total survey respondents, 70% responded to this question. Respondents deemed distillers grain very important to plant profitability, with an average rating of 4.6.

As Figure 1[1] shows, only 11% of respondents rated DG's importance to profitability as a 1, 2, or 3. In contrast, 89% of respondents rated DG's importance to profitability as a 4 or 5. The approximate volume-weighted responses are also specified in Figure 1. The volume-weighted and simple average responses are similar indicating regardless of plant size, DG production and sales are very important to ethanol plant profitability. These responses reveal how important distillers grain is as an output for ethanol plants.

Figure 1. Ethanol Plant Ratings of Importance of DG to Plant Profitability

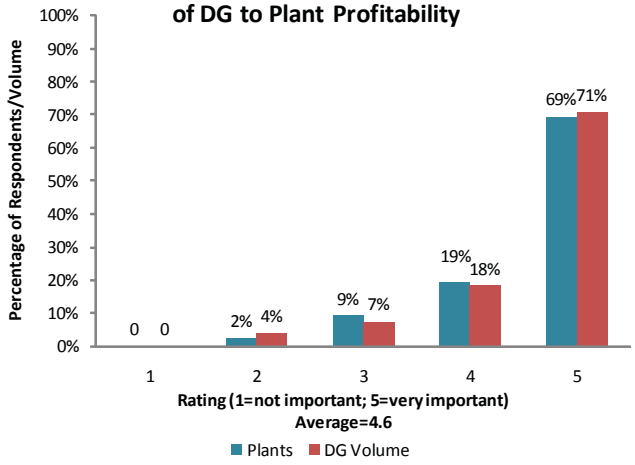

Figure 2. Plant responses to: "Has the importance of DG to the profitability of the plant increased, decreased, or stayed the same over the last three years?"

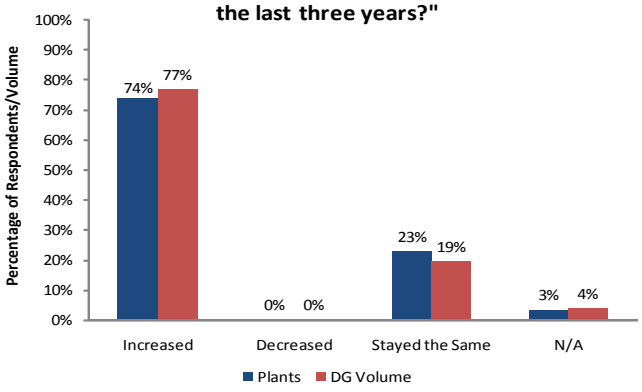

Figure 2[2] illustrates plants' responses to whether distillers grain's importance to plant profitability has increased, decreased, or stayed the same over the past three years. A large majority of respondents, 74%, indicated that distillers grain's importance to profitability has increased. No plant indicated that DG importance has decreased, and 23% indicated that it has stayed the same. The responses to these two questions suggest that in recent years, as the ethanol industry has become more mature, distillers grain co-product and value have become more vital to ethanol plant profitability.

Merchandising

Plants were asked about their method of marketing distillers grain. All plants that were surveyed responded. While almost three-fourths of plants (74%) market at least some DG themselves, a significant number (48%) also use a merchandiser. Table 1[3] shows the number of plants marketing distillers grain in each manner.

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About half (51%) of the respondents overall (including plants that produce dry DG, modified wet DG, and wet DG) market distillers grain solely by themselves. Plants that market DG in this manner produce 54% of the total ethanol produced by survey respondents. The average ethanol production of these plants is 66 mgy. The average amount of ethanol produced by plants in the survey is 62.3 mgy, so plants that market DG solely by themselves tend to be larger than average.

1 Question response rate: 70%

2 Question response rate: 70%

3 Question response rate: 100%

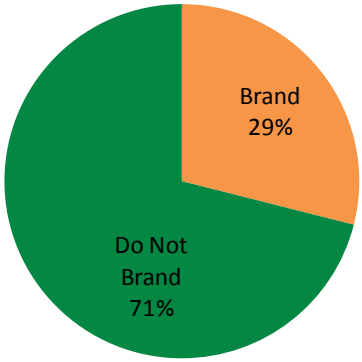
Approximately one-fourth (26%) of respondents only use a merchandiser to market their product (and do not market any product by themselves). Plants that market DG solely through a merchandiser produce 27% of the total ethanol produced by survey respondents. The average ethanol production for these plants is 63 mgy, only slightly larger than the average plant responding to the survey.

Finally, 22% of plants market some DG by themselves and some through a merchandiser. Plants that market distillers grain in this manner produce 19% of the total ethanol produced by survey respondents. The average ethanol production of these plants is 55 mgy, smaller than the average respondent.

Table 1[4] also shows how plants market the different type of DGs. Plants market more dry distillers grain through merchandisers than wet or modified wet DG. This is expected due to the longer shelf life and larger relevant geographic market of dry DG verses wet or modified DG. Markets for dry DG are less localized than markets for wet or modified DG. Also, as discussed above, larger plants market DG by themselves while smaller plants use merchandisers.

4 Question response rate: 100%

Figure 3. Branding Practices of DG Producers



Branding

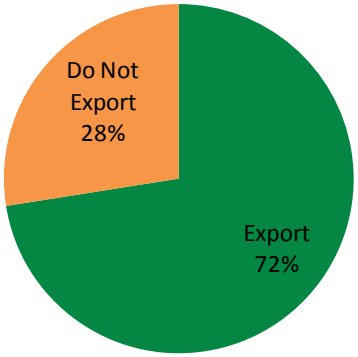
As feeding distillers grain has become a more common practice, some ethanol plants have begun to brand their DG. In the survey, plants were asked whether they brand their DG. Of total survey respondents, 91% answered this question. Their responses are shown graphically in figure 3[5]. While most plants (71%) do not brand the DG they produce, a significant number of plants (29%) brand their distillers grain. The average

5 Question response rate: 91%

Table 1. Who Markets Distillers Grain

Form of DG	Who Markets DG		
	Solely Plant	Solely Merchandiser	Plant & Merchandiser
Total all forms			
% of respondents	51%	26%	22%
% of ethanol produced	54%	27%	20%
Average ethanol production (mgy)	65.7	62.5	54.6
Dry DG			
% of respondents	53%	31%	16%
Modified Wet DG			
% of respondents	69%	22%	8%
Wet DG			
% of respondents	65%	30%	5%

Figure 4. Exporting Practices of DG Producers



ethanol production of plants that brand DG is 55 mgy, significantly smaller than the survey respondent average size of 62 mgy. Plants that brand DG may be doing so to target specific markets and are trying to differentiate themselves from the overall commodity market. Plants were also asked why they made the decision to brand. Most of the answers to this question focused on increasing the value of the product by differentiating it based on quality and consistency. As the ethanol and DG industries become more competitive, it is likely that plants will continue to look for ways to differentiate their product, thus branding of DG may become a more common practice.

Exporting

Exporting practices were also covered by the survey. Of total survey respondents, 96% responded to the questions regarding exporting. Their responses are shown in figure 4[6]. Of these, 72% export distillers grain. Plants that export DG are, on average, larger than those that do not. The average size of ethanol plants that export DG is 68 mgy, while the average size of plants that do not export is 49 mgy. Forty plants (32% of survey respondents) indicated their top export markets. Mexico, Canada and Asia are the top export markets for respondents. Of the plants that export DG, 65% indicated the percentage that they export. These plants export an average of 29% of their product.

6 Question response rate: 96%

Table 2. Percentage of Respondents Indicating they use each Transportation Mode for at least some DG Produced

	Transportation Mode		
DG Form	Truck	Rail	Barge
Dry	99%	69%	38%
Modified Wet	100%	0%	0%
Wet	100%	0%	0%

Table 3. Average Percentage of DG that Travels Each Distance

	Miles			
DG Type	0-50	50-100	100-200	200+
Dry	24%	25%	18%	34%
Modified Wet	59%	34%	8%	1%
Wet	76%	18%	6%	1%

Transportation

The survey also inquired about transportation of DG. Plants were asked about the mode of transportation by which they ship their product and the distance the product moves. Table 2[7] shows the percentage of respondents that move dry, modified wet, and wet DG by truck, rail, and barge. All of the modified wet and wet distillers grain produced by the respondents moves by truck, as does a majority of the dry DG. Producers commonly use multiple transportation modes. Almost one-third of respondents (30%) indicated that they transport dried DG via all three transportation modes, truck, rail and barge. A larger number of respondents (45%) use two of the three modes. In total, 75% of respondents use multiple transportation modes. From survey responses we received, we were not able to determine reliable volume-weighted percentages of dry DG that moves by truck, rail, or barge.

Corn and soybean meal futures are by far the most popular sources of information used to determine DG price. The sum of the percentages of responses indicates that 44% of respondents use multiple sources of information to price DG, signifying that they do not consider a single information source sufficient to make pricing decisions.

Table 3[8] shows the percentage of DG by form that is transported across various distance ranges. Dry DG is most likely to be transported greater distances. Respondents that produce dry DG transport an average of 24% of their product 0-50 miles. An average of 25% is transported 50-100 miles. An average of 18% is transported 100-200 miles. An average of 34% is transported over 200 miles. While a larger percentage of dry DG is transported farther distances, most modified wet and wet DG stays close to where it is produced. Respondents that produce modified wet DG transport an average of 58% of their production

Figure 5. Average Percentage of DG that Travels Each Distance

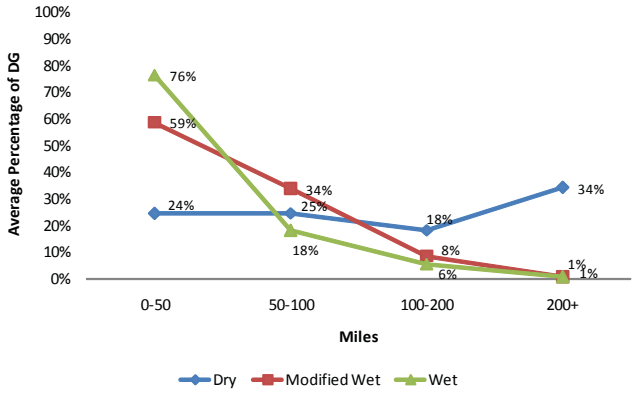
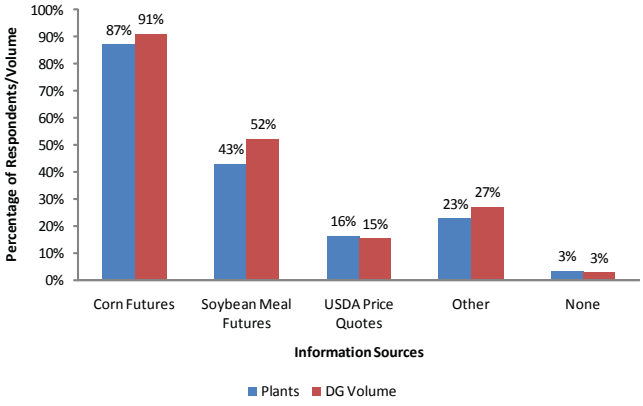


Figure 6. Pricing Information Sources used by DG Producers



0-50 miles. An average of 34% is transported 50-100 miles. An average of only 9% moves over 100 miles. Wet DG is even less likely to move large distances than modified wet DG is. Respondents that produce wet DG transport an average of 76% of it less than 50 miles from where it is produced. An average of 18% is transported between 50 and 100 miles. On average, only 7% of wet DG is transported over 100 miles. Figure 5 represents the distance each type of DG travels graphically.

Pricing

Plants were asked various questions regarding DG pricing and risk management practices. Specifically, plants were asked what types of information sources they use to establish DG transaction prices and 74% of survey respondents responded. Responses are

7 Question response rates: Dry: 73%; Modified Wet: 100%; Wet: 65%

8 Question response rates: Dry: 64%; Modified Wet: 78%; Wet: 63%

shown in Figure 6[9]. Corn futures prices were used by 87% of respondents to help set DG transaction prices. Plants that use corn futures to price DG produce 91% of the distillers grain produced by all respondents. Soybean meal futures are used as a price source by 43% of plants. These plants produce 52% of DG produced by respondents. The plants that use USDA DG price quotes (16%) produce 15% of DG produced by respondents. Other information sources are used by 23% of plants, and 3% of plants use no external information to set DG prices. Corn and soybean meal futures are by far the most popular sources of information used to determine DG price. The sum of the percentages of responses indicates that 44% of respondents use multiple sources of information to price DG, signifying that they do not consider a single information source sufficient to make pricing decisions.

A majority of respondents (64%) use a price risk management method, however, over one-third (36%) of respondents indicated that they do nothing to manage price risk for DG. Forward contracts are used to forward price DG by 40% of respondents who produce 40% of the total DG produced by respondents.

Plants were also asked what price discovery mechanisms they use to set prices for DG and 66% of survey respondents answered this question. Responses are shown in Figure 7[10]. Of those who answered the question, 65% indicated that they set DG price based on a formula. These plants produce approximately 56% of the DG produced by question respondents. Forward contract pricing is used by 21% of respondents, and these plants produce 20% of the total DG produced by respondents. Cash pricing is used by 54% of respondents who produce 61% of the total DG produced by respondents. Approximately 27% of question respondents use multiple methods of price discovery to set prices.

9 Question response rate: 74%

10 Question response rate: 66%

Figure 7. Price Discovery Mechanisms

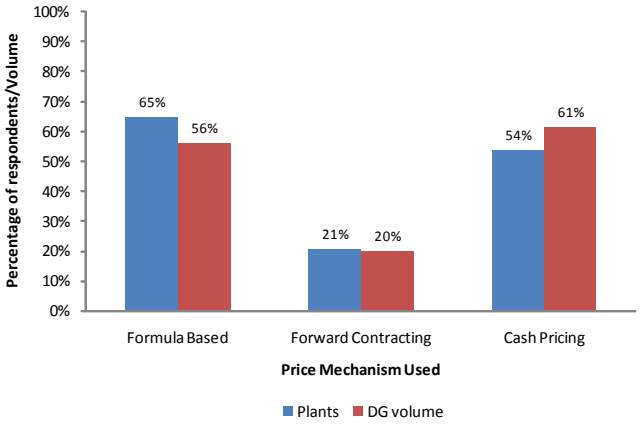
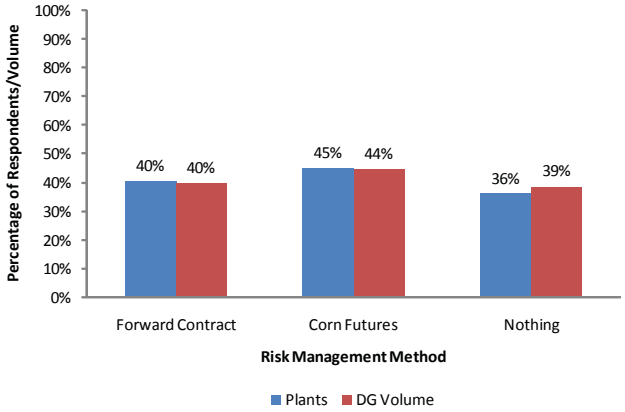


Figure 8. DG Price Risk Management Methods



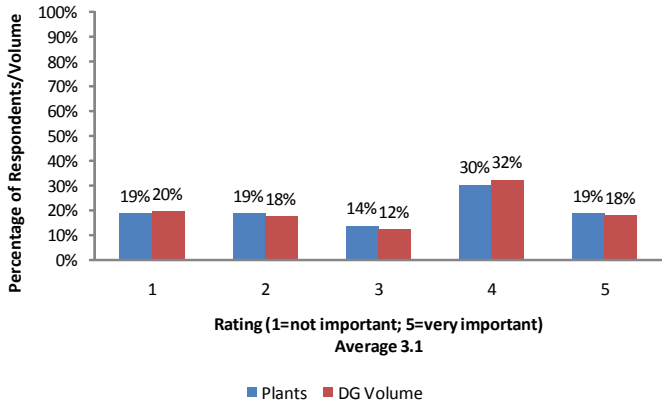
Plants were asked to identify methods they use for DG price risk management and 71% of survey respondents answered this question. Their responses are illustrated in Figure 8[11]. A majority of respondents (64%) use a price risk management method, however, over one-third (36%) of respondents indicated that they do nothing to manage price risk for DG. Forward contracts are used to forward price DG by 40% of respondents who produce 40% of the total DG produced by respondents. Corn futures are used to cross-hedge DG by 45% of respondents who produce

11 Question response rate: 71%

44% of the total DG produced by respondents. A significant number of respondents (21%) use both forward contracts and corn futures to manage DG price risk. Only one respondent indicated using Soybean Meal futures to cross hedge DG.

Distillers grain merchants were asked the importance of a DG futures market for managing risk on a scale of 1 (not important) to 5 (very important). Of the survey respondents, 69% responded to this question. Figure 9[12] summarizes the responses. The average of their responses is 3.1, indicating neutrality in regards to the helpfulness of establishing a DG futures market. The distribution of responses indicates that some respondents are satisfied with their current risk management strategies while others (those who responded with a 4 or a 5) would like more tools to manage DG price risk. Almost half (49%) of respondents believe that a DG futures contract would be an important risk management tool.

Figure 9. Ethanol Plant Ratings of the Helpfulness of a DG Futures Contract for Risk Management



12 Question response rate: 69%