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### Summary and Implications

The objective of this study was to evaluate the use of corn co-products in beef systems in Iowa. A series of questions was developed and constructed into a survey format and distributed to 2,157 producers of varying production types throughout Iowa using a database compiled by ISU Extension Beef Field Specialists. A total of 349 (n=349) surveys were returned and evaluated. Of the surveys returned 243 producers indicated that they marketed fed cattle on an annual basis and 215 producers operated beef cow herds with some producers falling into both categories.

Overall it was determined that Iowa producers are taking advantage of including corn co-products into their nutrition programs. Large operations are more actively feeding co-products with 87% of beef cow operations over 200 head and over 90% of all producers marketing more than 500 head indicating they are currently feeding corn co-products. The most commonly fed co-products were dry corn gluten feed, wet corn gluten feed, dried distillers grains with solubles (DDGS), wet distillers grains with solubles (WDGS), and modified distillers grains with solubles (MDGS).

When asked what the producers felt the primary advantages were for feeding corn co-products, the advantage of price was noted by an overwhelming majority (77%). Producers were also asked how their use of corn co-products has been influenced and the most popular responses were that more co-products will be fed and that a comparison will be made between the price paid for each corn co-product on a delivered dry matter basis. With this in mind, it is reasonable to believe that Iowa beef producers are focusing on the most economical nutrition programs and that using corn co-products are a viable and economical resource for feeding beef cattle in Iowa.

However, some disadvantages were expressed by producers. The most common concerns were the storage issues of co-products, the problem of only needing a small amount of co-product at a time, and the increasing levels of sulfur common in corn co-products.

### Introduction

The growth of the ethanol industry has had great impact on Iowa agriculture. Not only has it increased the demand for corn and increased prices, but along with this the production of corn co-products has also grown. Many of Iowa's livestock producers have looked to the new feed sources in order to deal with the rising corn prices. Accordingly, the use of corn co-products as feed has become the new source of feed energy. The objective of this survey was to evaluate the use of corn co-products in beef operating systems in Iowa.

### Materials and Methods

Iowa Beef Center staff developed a questionnaire to measure the impact that feeding corn co-products is having on the Iowa beef industry. The survey was then sent to producers whose names had been contributed by ISU Extension Beef Field Specialists from the different regions of Iowa. A total of 2,157 surveys were mailed to producers along with a self-addressed stamped envelope for returning the surveys. A total of 349 surveys were returned and summarized. Survey questions dealt with operation size and type (cow-calf vs. feedlot), if the operation was feeding co-products, what types of co-products were being fed, what issues the producer was having in relation to feeding co-products, and methods the Iowa Beef Center can use to effectively teach producers about feeding corn co-products. Cow-calf operation size was broken down by the following categories: less than 50 head, 50 to 99, 100 to 199, 200 to 499 and over 500. Feedlot operation size categories were as follows: less than 100, 100 to 499, 500 to 999, 1000 to 2500, and over 2500 head. The results of the survey were then evaluated by producer type (Cow/Calf vs. Feedlot) with some producers being included in both. Survey responses that had either no responses or indicated they no longer had cattle were removed from the data set. Due to small sample size in the cow-herds with over 500 head, it was decided to combine them with the 200 to 499 head category.

### Results and Discussion

#### Overall

The Iowa Beef Center has the mission to enhance the vitality, profitability, and growth of the Iowa beef industry and one method used is by the publication of a newsletter entitled "Ethanol Feeds: Feeding Distillers Grains to Beef Cattle." Of the producers evaluated in this survey, 56% replied that they have indeed read one or more of the newsletters and the most common method of receiving the newsletter was by mail delivery from their local County Extension services (50%) or given at a meeting sponsored by Iowa State University Extension (36.5%). A total of

45% of the respondents also indicated they have attended an Iowa Beef Center workshop on feeding corn co-products while 31% have visited the Iowa Beef Center webpage in search of information about ethanol co-products. When asked what the most preferred method of receiving information about ethanol co-products, the most popular method was via the form of a newsletter received in the mail. Other popular choices were Extension sponsored meetings and regional field days and demonstrations. When asked what impact the information provided by the Iowa Beef Center has had on how these producers plan on using corn co-products, 61.5% say they plan on using more co-products and 51.7% say they will compare the price paid for co-products on a delivered dry matter basis.

An increase in the percentage of producers utilizing co-products compared to previous surveys was observed. In a 2005 Iowa Beef Center survey (Lawrence and Schuknecht: Iowa Beef Producer Profile, 2005) 70% of feedlot producers were using co-products while only 28% of cowherds were feeding co-products. The producers included in the 2005 survey were also managing larger operations. Therefore, not only has the number of producers currently feeding co-products risen (Figure 1), but it can also be seen that smaller operations are now more actively utilizing co-products.

### *Cow/Calf Operations*

There were 215 producers surveyed indicating they manage beef cows and were broken into four categories: less than 50 head (30.7%), 50-99 head (24.65%), 100-199 head (30.23%), and more than 200 head (14.42%). The percentage of cow/calf producers feeding corn co-products generally increases as operation size increases (Figure 1). The larger operations also indicate that they have been feeding corn co-products for a longer period of time while smaller operations have more commonly begun feeding in more recent years (Table 1). The number of producers currently not feeding corn co-products, but with intentions of doing so in the future, also increased as the number of cows managed increases.

Forms of ethanol corn co-products used by beef cow herds were evaluated with dry corn gluten feed being the most popular (43.61%). Other heavily used forms were wet corn gluten feed at 35.34% and dried distillers grains with solubles (DDGS) at 30.83% (Table 2). The type of feed producers choose to use involves many different variables such as distance from the product supplier and availability of product; as well as advantages and disadvantages of feeding corn co-products. About two-thirds (67.07%) of all surveyed producers managing beef cows and currently feeding co-products are less than 50 miles from the plant or source that they receive the product from and 71% say they have no problems with product availability (Figure 2).

A majority (56%) of beef herd managers purchase their co-product from one source and the most common purchasing method is through the spot market at the plant (34%). Other purchasing methods evaluated were forward

contracting at the plant (16%), spot market purchases using a broker (18.5%), and forward contracting through a broker (17.5%). Fourteen percent of beef herd managers indicated they purchase co-products from other sources, most commonly through a local cooperative or feed supply source.

Producers were also surveyed about the advantages for utilizing co-products in their operations and were asked to select two choices. The top response at 77.67% was the price advantage of corn co-products. The other top responses were performance at 42.33% and palatability at 35.35%. The notable disadvantage on the other hand was the issue of storing co-products and their rapid quality deterioration, as 53.02% indicated storage was a primary disadvantage, and 36.74% indicated they deal with the issue of only needing a small amount delivered at one time. However, this disadvantage should come to no surprise as beef cow managers who feed wet or modified distiller's grains or gluten utilize outdoor storage with plans to feed the product in less than 7 days (31.71%) or between 7 and 14 days (47.56%). See Figure 3.

### *Feedlot Operations*

The 243 respondents that market fed cattle on an annual basis were divided into five categories: 32.51% with less than 100 head, 38.27% with 100-499 head, 13.99% with 500-999 head, 6.58% with 1,000-2,500 head, and 8.64% with greater than 2500 head. The percentage of producers who are currently utilizing corn co-products in their fed cattle operation increases as the size of the operation gets larger (Figure 1) with more than 90% of all operations 500 head and larger incorporating co-product into their rations. Also seen in the survey was that the larger operations have been using co-products for a longer period of time (Table 1). The smaller operations are beginning to utilize corn co-products as they become more familiar with their use as 38% of producers currently feeding have begun in the last year while 65% of the less than 100 head operations plan on using co-products in the future.

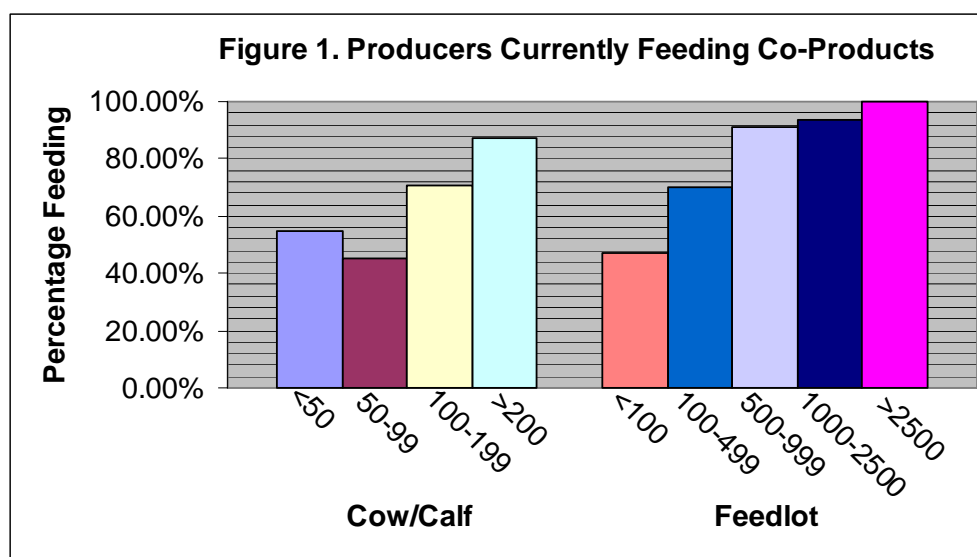
The most commonly used forms of co-products used by feedlot operators (Table 2) are wet corn gluten feed (37.87%), dry corn gluten feed (32.54%), dried distillers grains with solubles (32.54%), wet distillers grains with solubles (30.77%), and modified distillers grains with solubles (24.85%). Feedlot operators surveyed indicated that price was the primary advantage for feeding corn co-products (76.13%). This can be related to the fact that 63.85% of producers receive the product from a plant less than 50 miles away (Figure 2) and utilize forward contracting methods with the plant (24.48%). Palatability (41.56%) and performance (42.39%) were also advantages producers felt they gained by feeding corn co-products. However, the top four disadvantages chosen by feedlot operators with using corn co-products were: 46.50% of producers felt storage was an issue, 29.22% listed delivery of small amounts, 25.10% listed product consistency as an issue, and 24.28% felt sulfur levels were a disadvantage.

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The storage disadvantage can be better understood knowing that 38.84% of producers who feed wet or modified distillers grains or gluten pile the product outside and feed in less than 7 days while 45.45% pile and feed between 7 and 14 days (Figure 3). Also related to storage disadvantages is the problem that they need only a small amount of product delivered at one time. While product consistency and increased sulfur levels were chosen as primary disadvantages; it is ironic that only 15.06% of producers always request a nutrient analysis while 41.43% of producers receive product from several sources.

### Conclusion

Iowa beef producers are aware of the increased cost of feeding cattle due to the growing ethanol industry and are utilizing more corn co-products to combat this rise. Producers are actively searching for knowledge about methods of feeding corn co-products by reading published articles and attending Extension sponsored meetings. In addition to recognizing the price advantages, producers also taking advantage of improved ration palatability and performance impacts. This survey showed that the use of co-products is not limited to large operations as once thought. Producers with lower number of cattle are finding ways to take advantage of improved economic returns and indicate the Extension network is helping them realize these advantages.



**Table 1. Impact of operation size on how long producers have been using co-products.**

	Cow/Calf Producers (n= 133)				Fed Cattle Producers (n= 169)				
	<50	50-99	100-199	>200	<100	100-499	500-999	1000-2500	>2500
<1 Year	25.00%	45.83%	15.22%	14.81%	37.84%	15.38%	12.90%	0.00%	4.76%
1-5 Years	41.67%	41.67%	50.00%	48.15%	40.54%	58.46%	45.16%	20.00%	23.81%
>5 Years	33.33%	12.50%	34.78%	37.04%	21.62%	26.15%	41.94%	80.00%	71.43%

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**Table 2. Types of co-products fed by operation type.**

	Cow/Calf	Feedlot
Dry Corn Gluten Feed	43.61%	32.54%
Corn Gluten Meal	5.26%	3.55%
Wet Corn Gluten Feed	35.34%	37.87%
Condensed Steep Water w/Solubles	1.50%	1.18%
Dried Distillers w/ Solubles (DDGS)	30.83%	32.54%
Condensed Distillers Solubles	20.30%	17.75%
Wet Distillers Grains w/ Solubles	23.31%	30.77%
Modified Distillers Grains w/ Solubles	15.79%	24.85%
Bran	4.51%	7.10%
Other	0.75%	1.18%
	<b>Cow/Calf (n= 133)</b>	<b>Feedlot (n= 169)</b>

