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Impact of COVID-19 on Demand for Distillers Grains from Livestock Operations

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Market Report	Year Ago	4 Wks Ago	5/29/20
Livestock and Products, Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.	*	*	*
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.	168.64	160.88	167.19
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.	145.13	128.00	*
Choice Boxed Beef, 600-750 lb. Carcass.	220.64	272.33	374.04
Western Corn Belt Base Hog Price Carcass, Negotiated	75.82	*	*
Pork Carcass Cutout, 185 lb. Carcass 51-52% Lean.	83.66	75.28	88.08
Slaughter Lambs, wooled and shorn, 135-165 lb. National.	155.38	162.25	NA
National Carcass Lamb Cutout FOB.	393.43	408.60	410.54
Crops, Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu.	4.10	4.28	4.13
Corn, No. 2, Yellow **Columbus**, bu.	3.84	2.76	2.90
Soybeans, No. 1, Yellow **Columbus,** bu.	7.34	7.66	7.74
Grain Sorghum, No.2, Yellow Dorchester, cwt.	6.14	5.64	6.30
Oats, No. 2, Heavy Minneapolis, Mn, bu.	3.24	3.02	3.50
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.	*	*	*
Alfalfa, Large Rounds, Good Platte Valley, ton.	105.00	90.00	87.50
Grass Hay, Large Rounds, Good Nebraska, ton.	90.00	85.00	80.00
Dried Distillers Grains, 10% Moisture Nebraska Average.	12100	193.33	123.25
Wet Distillers Grains, 65-70% Moisture Nebraska Average.	42.75	56.65	42.79
* **No Market**			

Government and industry responses to COVID-19 cases have created a variety of unique situations in the agriculture industry. "Stay-at-home" orders forced consumers to be homebound, increasing the demand for food in grocery stores while reducing the need for food in restaurants. These caused a series of rapidly changing supply and demand conditions along the livestock supply chain. Meat destined for restaurants needed to be repacked and reprocessed to make it compatible to sell in grocery stores. Meat packing plants continued to try to process harvest-ready animals, but a growing number of positive cases among plant workers forced idling, reduced plant utilizations, and – in some cases – resulted in closures. This created a temporary supply surplus situation for livestock producers while creating a meat shortage for retailers. Since price reflects scarcity in a market system, livestock cash prices dropped and wholesale cutout prices rose. The cumulative effect was livestock producers selling livestock far below breakeven prices.

Rising and changing feed costs further reduced livestock producer profitability. As "stay-at-home" orders reduced consumer travel, demand – and subsequently prices – for ethanol fell, causing some ethanol plants to idle and close. Distillers grains are co-products of ethanol production and are used as an energy- and protein-rich feed source for some Nebraska livestock producers. Decreased ethanol production decreased the availability of distillers grains. Once again, since prices reflect scarcity, distillers grains prices rose. However, these effects were not the same across location and type of distillers grains. While much of the commentary regarding the impact of COVID-19 on the livestock industry has focused on meat packing difficulties and livestock prices, this article diverges

slightly by exploring the repercussions of COVID-19 on the market for distillers grains. Specifically, we examine how the prices of different distillers grains varied in relation to corn – a common feed substitute – and how these effects varied spatially.

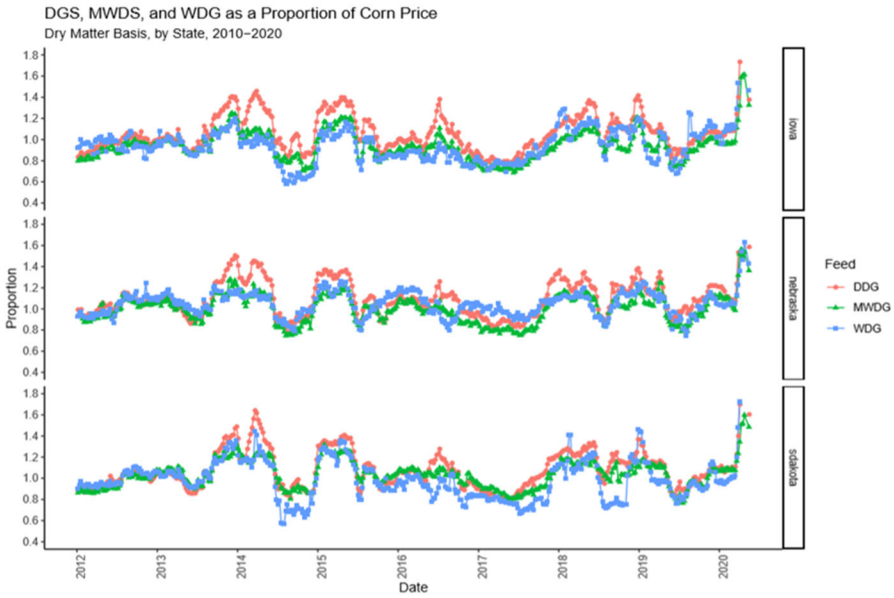
Ethanol Prices

COVID-19's impacts on the ethanol industry, distillers grains markets, and, subsequently, livestock markets have been plentiful. Reduced automobile travel (gasoline demand dropped 32% from the year-ago period in April) paired with a supply surge and price war between Russia's and Saudi Arabia's oil producers caused already-struggling ethanol plants to idle. Last week's Cornhusker Economics article covered the difficulties facing the Nebraska ethanol industry and found substantial declines in margins and volume. The authors calculated a 71% decrease in margins from November 2019 to May 2020 and a 34% decrease in ethanol production volume in the state over the same time period[1]. With domestic ethanol production reaching its lowest level in over a decade, supplies of distillers grains – the most common co-product of corn ethanol – also substantially decreased[2]. Consequently, many livestock producers have been left without access to an important component of their feed rations[3]. Even in areas where distillers grains remained in production, their reduced availability temporarily spiked co-product prices while corn prices fell – corn futures went from $3.87/bu. in early March 2020 to roughly $3.20/bu. by mid-May[4].

Types and Prices of Distillers Grains

Decreased capacity of meat processing plants, many located in the same midwestern region as offline ethanol facilities, further impacted the demand for distillers grains. Projected difficulties in moving livestock from feeding facilities to processing plants incentivized producers to slow their herds' weight gain and remove distillers grains from their feed rations[5]. The resulting combination of market forces pulled distillers grains prices in opposite directions: Reduced supply pushed prices upward, while demand attrition pulled prices back down. These competing effects largely prohibited a more pronounced spike in distillers grains prices.

Until mid-April, the upward pressure on prices prevailed, as distillers grains prices increased by roughly 20% in Iowa, Nebraska, and South Dakota over their mid-March levels (see Figure 1)[6]. The price directions were nearly identical across different types of distillers grains, including wet distillers grains (sold locally and reflecting local demand) and dried distillers grains (often shipped globally and representing demand beyond local markets). However, the price difference between the types of distillers grains was most pronounced in Dry Distillers Grains (DDG). Prices of DDG relative to Wet Distillers Grains (WDG) or Modified Wet Distillers Grains (MWDG) were significantly higher largely reflecting greater demand to store product and reduced demand for WDG used in local live-



Source: Daily Ethanol Report Agricultural Marketing Service Livestock, Poultry & Grain Market News, USDA AMS, various issues.

Figure 1: DDGS, MWDG, and WDG as a Proportion of Corn Price

stock feeding. In the following month, distillers grains in the same regions fell back to pre-pandemic prices, illustrating the combined effects of slowly increasing ethanol production and still-depressed distillers grains demand[7]. In Nebraska, distillers grains prices were relatively high compared to feeding corn, approximately 60% higher. These price ratios were largely similar to 2014 when price ratios were approximately 50% higher. Similar spikes were seen in 2015, 2018 and 2019. So, while price ratios were higher than in the beginning of 2020, they were not atypical.

Given the fluctuations in prices, supply, and demand for distillers grains over recent months, it is pertinent to consider how a weak market for distillers grains may, in turn, have a compounding effect on the domestic livestock industry. Since the early 2010s, U.S. gasoline prices have steadily fallen from their record highs and as the price of gasoline falls so too does consumers' demand for fuel with higher ethanol blends[8]. To combat declining demand for fuel, ethanol plants have marketed co-products – such as distillers grains – to boost overall margins[9] Yet, the aforementioned deterioration of co-product demand coupled with declining ethanol prices resulted in shrinking margins and ethanol plant closures[10]. Considering that 40% of the U.S. corn supply goes to the domestic ethanol industry and record corn production is predicted for the 2020 crop year, these changes, if prolonged, could have significant effects on corn prices, competing feeds, and feedlot operations.[11] Without ethanol plants demanding corn at their historical levels, corn prices would fall, the demand for and price of competing feeds would rise, and feedlot operations would be left to navigate the unfamiliar terrain of a dramatically altered feedstuff market.

Livestock Feed Substitutes

Despite the changing feedstuff situation facing livestock producers in the ethanol and packing plant rich regions of the Midwest, operations in these regions generally have the most viable alternatives for buying feed products and selling livestock. In the short term, varying combinations of rolled corn, alfalfa, grass, and soybean meal – all plentiful in the area – may substitute for a decreasing distillers grains supply. Plentiful hay stocks, in particular, may lessen the impact left by diminished distillers grains availability; hay stocks in Iowa, Nebraska, South Dakota, and Eastern Corn Belt states are up by 48%, 29%, 96%, and 17%, respectively, over last year's levels.[12] Considering Midwestern ethanol plants' distillers grains production fell by roughly 47% from the beginning of March to mid-April and only increased 18% from its lowest point – still 33% lower than March 1 – those alternative feeds have a significant opportunity to capture market share and allow flexibility in timing of livestock to harvest markets[13].

For the time being, spikes in the prices of distillers grains have been partially abated by the decline in demand due to processing plant difficulties and availability of alternative feeds, as seen in Table 1 below. As processing plant capacities increase and gasoline prices

Table 1: Grass, Alfalfa, Corn, SBM and DDG Bi-Weekly Prices

Date	NE Grass ($/Lg Rnd Bale)	NE Alfalfa ($/Lg Rnd Bale)	NE Corn ($/Bu)	IA SBM ($/ton)	NE DDG ($/ton)
1/4/20	95.00	105.00	3.78	282.80	161.50
1/18/20	95.00	105.00	3.77	282.50	158.50
2/1/20	95.00	107.50	3.77	275.10	149.00
2/15/20	102.50	107.50	3.76	272.50	146.50
2/29/20	95.00	97.50	3.66	274.00	143.25
3/14/20	85.00	87.50	3.69	284.90	139.75
3/28/20	85.00	87.50	3.23	325.60	169.50
4/11/20	85.00	92.50	2.96	287.30	195.50
4/25/20	85.00	95.00	2.84	292.00	212.50
5/9/20	80.00	95.00	2.86	289.90	191.50
5/23/20	80.00	90.00	3.00	284.10	160.50

Source: USDA AMS Market News, various reports

remain low enough to further tighten ethanol plants' margins however, longer-term changes in the market for feedstuffs may occur. For example, some have already proposed field peas as a viable alternative to distillers grains in feed rations, and producers have even explored feeding previously-dumped milk back to their dairy cattle[14]. While markets tend to adjust in the long-run, livestock producers can expect continued uncertainty surrounding feed markets for the foreseeable future. .

Summary

Overall, the net impact of COVID-19 on livestock producers is unclear. When fewer ethanol plants are operational, corn prices – unless buoyed by an unusually strong export market – fall. Lower corn prices reduce the cost of grain for livestock finishing operations, dampening the impact of reduced cash prices on feeding margins. Correspondingly, the market segment formerly filled by distillers grains may readjust to allow for both new and existing feeds. Therefore, while a weak distillers grains market could impact Nebraska livestock producers, the impact is not as pronounced as previously estimated.

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