

Iowa Farm Outlook

Department of Economics
Ames, Iowa

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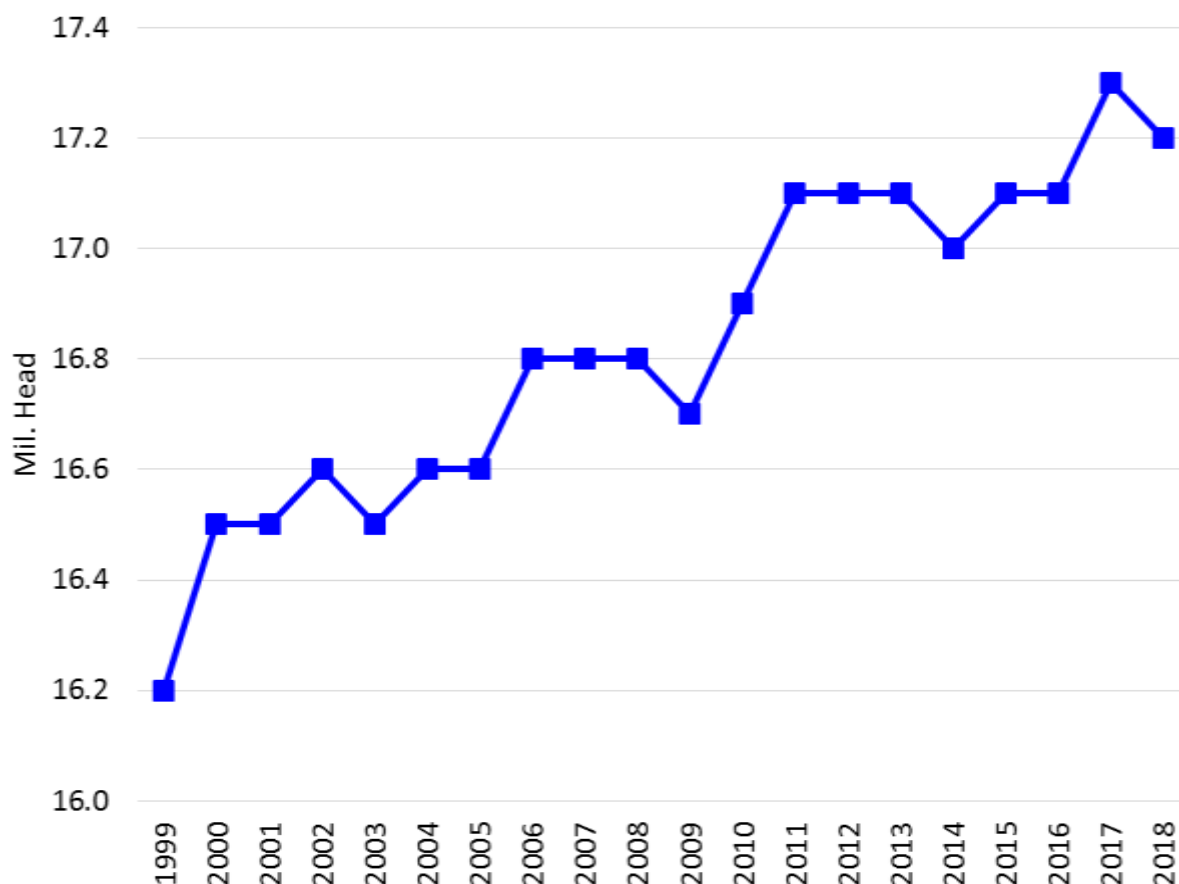
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Capacity Utilization in the Cattle Feeding Sector Improving

Despite a recent uptick in feedlot capacity use rate, the U.S. still has excess feedlot bunk space that's not being used efficiently. Over capacity became an issue in the early 2010s as cattle numbers declined cyclically and severe drought forced even more liquidation. Tightening supplies improved cow-calf profits. Cow-calf producers retaining heifers to expand herds left even more feedlot pens empty. Feedlot managers competing to buy scarce cattle to fill those pens helped push feeder cattle prices record high. That was good for cow-calf operations, not so for feedlots.

USDA's National Ag Statistics Service February Cattle on Feed report provides an estimate of total capacity of U.S. feedlots with 1,000 or more head capacity. On January 1, 2018 those lots had capacity of 17.2 million head, 100,000 head less than the peak in 2017, but still up one million head from the 16.2 million first reported in 1999 (Figure 1).

Figure 1. Total U.S. Feedlot Capacity, 1,000 Head and Larger Capacity Feedlots



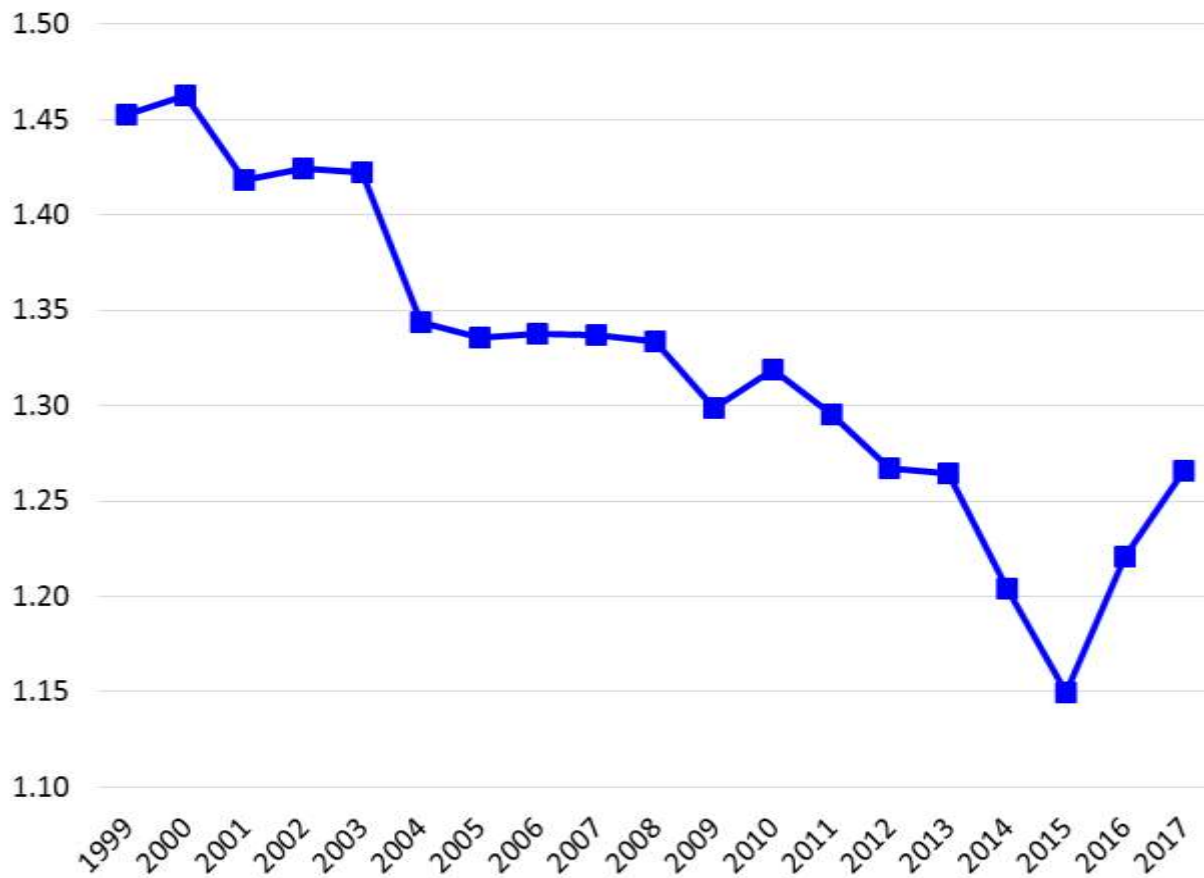
Data Source: USDA's National Agricultural Statistics Service.

Analysts can calculate feedlot capacity utilization rate in several ways. One is to divide the number of cattle on feed by total capacity. Comparing January 1 cattle on feed to capacity indicates a capacity use rate of 66.8% at the beginning of 2018. That's up from 61.3% in 2017 and the highest capacity use since 2012. Since 1999, capacity use rate, by this measure peaked in 2008 at 72.0%. This measure varies by the number of cattle in the

U.S., whether producers are expanding or liquidating, and the timing of feedlot placements. Large feedlot placements in 2017 boosted the January 1, 2018 feedlot inventory 7.2% year over year. More cattle already in feedlots on January 1 partly explains the large hike in capacity use at the beginning of 2018.

Perhaps a better way to measure capacity utilization is to divide annual feedlot marketings by capacity. The available feedlot capacity is not just used once during the year, but can be thought of as a flow (cattle enter and exit feedlots) with more than one turn per year. This measure of use has steadily declined since 1999, bottoming at 1.15 in 2015 and popping back up to 1.27 by 2017 (Figure 2). By this measure, feedlot marketings have generally become a smaller proportion of available, or potential capacity. A number of factors contribute to this decline including fewer cattle, longer feeding times, and slower turnover rates. Heavier finished weights include the effect of more days on feed.

Figure 2. U.S. Feedlot Capacity Utilization, Annual Feedlot Marketings/Capacity



Data Source: USDA's National Agricultural Statistics Service.

The largest proportion of the adjustments to occur in the current cattle inventory cycle likely have already happened. So capacity use rate should be stabilizing, or improving. Achieving a rising capacity use rate is a big accomplishment for the cattle feeding industry. It suggests better financial health for sector.

Capacity is linked to total number of feedlots. The February Cattle on Feed report indicated that the total number of U.S. feedlots declined from 29,219 in 2016 to 28,209 in 2017 (Table 1). The decrease in feedlots occurred in the less than 1,000 head and 1,000 to 1,999 head capacity lots.

Unprofitable market conditions in 2015 and 2016 prompted some of these size feedlots to exit the industry, or cease operations. Their physical structures still likely exist and could be reopened if economic conditions allow.

These smaller feedlots are often farmer-feeders who also raise crops. Low corn prices in 2017 encouraged them to feed more animals. Larger feedlots fed more animals, too. The over 1,000 head capacity lots marketed over one million head (4.9%) more cattle than the previous year and the smaller lots upped marketings 125,000 head

(4.0%) year over year. In Iowa, marketings from lots with less than 1,000 head capacity rose 14,000 head (1.9%) and 1,000 or more head capacity feedlots marketed 79,000 head (7.8%) more.

Table 1. Number of Feedlots and Marketings by Size of Feedlot in the U.S.

Feedlot capacity	2016		2017	
	Lots (number)	Cattle marketed (1,000 head)	Lots (number)	Cattle marketed (1,000 head)
Less than 1,000 head	27,000	3,100	26,000	3,225
1,000 head or more	2,219	20,873	2,209	21,899
1,000 - 1,999	830	673	770	689
2,000 - 3,999	590	1,260	630	1,410
4,000 - 7,999	350	1,740	360	1,840
8,000 - 15,999	190	2,250	190	2,340
16,000 - 23,999	77	1,740	77	1,900
24,000 - 31,999	54	1,950	54	1,980
32,000 - 49,999	55	3,010	55	3,440
50,000 and Over	73	8,250	73	8,300
All feedlots	29,219	23,973	28,209	25,124

Data Source: USDA's National Agricultural Statistics Service.

As expansion boosts cattle inventories, capacity use rate should also rise if the number of feedlots has stabilized. Cattle feeders made money in 2017. In fact, estimates put 2017 returns at the second highest since 2003, and not much lower than the phenomenal level in 2014. Steers were estimated to be sold in January, February, and March 2018 at a \$66.87, \$103.46, and \$42.03 per head profit, respectively. April 2018 closeouts were estimated at a loss of \$34.17 per head.

Could recent feeding profits prompt some now empty lots to again feed cattle? Can the industry feed enough more cattle to boost capacity use rates further and spread fixed costs over more cattle? Market conditions will answer both questions.

Currently, net returns projected for closeouts in May are for losses of \$146 per head and the 2018 annual average return is forecasted at a loss of \$90 per head. This profitability outlook, or lack thereof, could be an impediment for feedlots aggressively filling lots especially for smaller feedlots in Iowa.

Cattle on feed in Iowa feedlots with a capacity of 1,000 or more head totaled 740,000 head on April 1, 2018, according to the latest USDA NASS Cattle on Feed report. This was up 1.4% from last month and up 10.4% from last year. Iowa feedlots with a capacity of less than 1,000 head had 570,000 head on feed, down 2.6% from last month and down 6.6% from last year. Cattle on feed in all Iowa feedlots totaled 1,310,000 head, down 0.4% from last month but up 2.3% from last year.

Placements of cattle in Iowa feedlots with a capacity of 1,000 or more head during March totaled 107,000 head, a decrease of 9.3% from last month and down 7.8% from last year. Feedlots with a capacity of less than 1,000 head placed 38,000 head, down 15.6% from last month and down 45.7% from last year. Placements for all feedlots in Iowa totaled 145,000 head, down 11.0% from last month and down 22.2% from last year.

Changing capacity utilization in the coming years is something for the industry to keep an eye on. Wringing excess capacity out of the system takes time and that typically happens through financial losses and industry exit. However, this excess feedlot capacity doesn't likely exist in Iowa. Over the past 15 years, Iowa's market share of cattle on feed has increased from 7.5% to 9.0%. Iowa, in combination with Nebraska, South Dakota, Minnesota, Wisconsin, Illinois, and Missouri, accounted for nearly 40% of the U.S. cattle on feed as of January

1, 2018, compared to less than 34% in 2004. Iowa and the upper Midwest have quietly been regaining market share in recent years due to many factors including competitively priced corn and corn coproducts, improved production efficiencies as compared to other regions, and expanded value-added market opportunities.

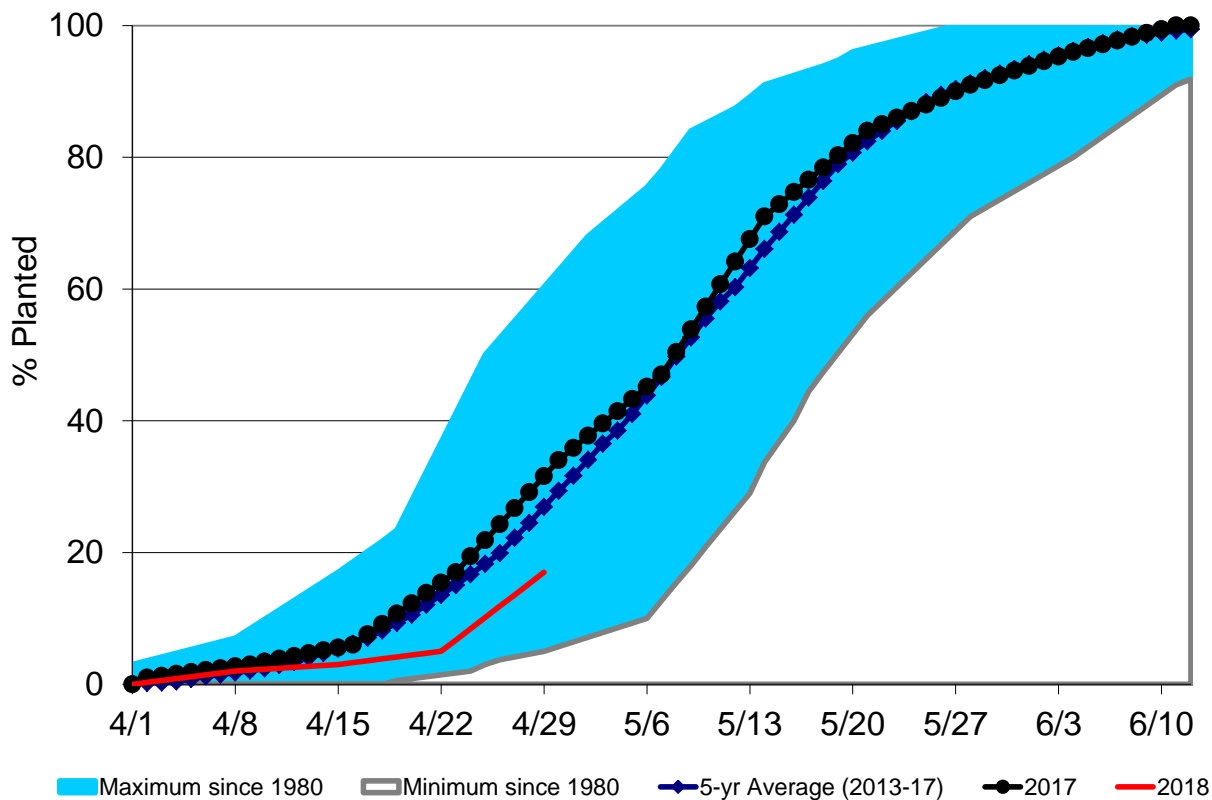
Lee Schulz

Planting Progress?

As the calendar turns to May, crop market participants turn to the weekly Crop Progress reports for updates on the speed of planting. And the news story of the early planting season has been the relatively slow progress for corn. Winter seemed to hang on quite a bit longer than usual and soil temperatures remained well below optimal levels until deep into April. That delayed many producers in the northern two-thirds of the U.S. as they looked to begin planting. But that also provided some support for prices to rally even as the planters have started to roll.

As of April 29, USDA estimated that 17% of the intended corn acreage had been planted. That is 10% behind the 5-year average and 15% behind last year's pace. Only two states are estimated to be slightly ahead on corn planting progress, Missouri and Texas; and that's only due to a fantastic planting week in Missouri, where the percentage jumped from 16% to 52%. The largest delays are occurring in the northern corners of the Corn Belt. Corn plantings basically haven't started in the Dakotas or Minnesota. Meanwhile, there have also been significant delays in Indiana, Ohio, and Pennsylvania. Iowa, in this case, is exactly like the nation, at 17% planted and 10% behind the 5-year average. However, as Figure 1 shows, early May is when the vast majority of corn crop enters farm fields and one good week can make a lot of difference.

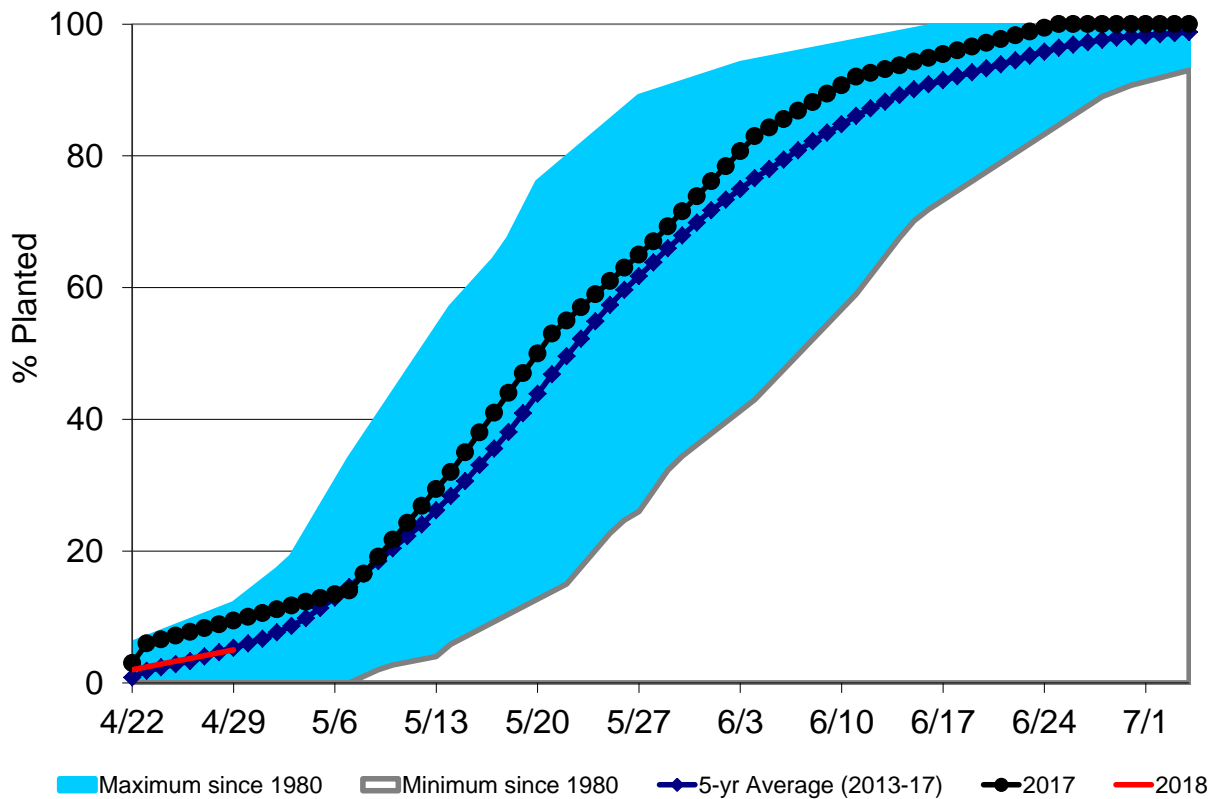
Figure 1. U.S. corn planting progress (Source: USDA-NASS).



Soybean plantings are off to a more typical start. As of April 29, 5% of the nation's intended soybean acres had been planted. That is on par with the 5-year average and 4% behind last year's pace. The states running ahead of usual are mostly along the middle Mississippi River (Arkansas, Missouri, and Illinois), although Nebraska is off to a strong start as well. As with corn, most of the delays are occurring along the western and eastern regions of the Corn Belt. Iowa's soybean planting pace of 3% matches the 5-year average. As Figure 2 displays, typical

soybean planting progress plays out a bit deeper into late May and early June. However, with roughly 90 million acres expected in soybeans, any planting delays are being closely watched by market participants.

Figure 2. U.S. soybean planting progress (Source: USDA-NASS).



The relative lack of progress in corn planting and the thought that delays could impact soybeans as well have provided some storylines for the markets to move a bit higher through the last half of April. While plantings will likely catch back up, concerns about drier conditions in the Southern Plains, wetter conditions in the Ohio River valley, and any potential yield impacts from planting delays will deliver some fodder for some additional strengthening of the “weather rally”. And given the other news stories circling around the markets, the weather story is at least playing close to the usual script.

But speaking of storylines not aligning with the script, crop export sales have exhibited a contra-seasonal bounce this spring that has helped support the weather rally. Despite the harsh rhetoric surrounding the NAFTA trade agreement renegotiations and the trade disputes between the U.S. and China, crop export sales since the beginning of the year have rebounded to catch up to last year’s pace. Export shipments are still lagging, but at least the potential for additional product movement is there. Figure 3 shows the pattern for corn. The larger moves came during the 1st quarter of the calendar year. But it’s the destination of the sales that could bring the most concern. Out of our top six corn export markets this year, only Mexico has purchased more corn. The other top markets are lower. Some are significantly lower, such as South Korea and Taiwan, where corn sales are off by more than 20%. Others are just marginally lower, such as Peru and Colombia. But the largest change has been the growth of sales to unknown destinations, up nearly 50% at the moment. Thanks to these sales to “somewhere” corn export sales are only 2% below last year. In the past, many of these sales to unknown destinations ended up moving to our top markets (Mexico, Japan, South Korea, and Taiwan). If that pattern holds and these shipments occur, that will provide additional support for the corn market.

For soybeans, the export sales boost really started in March and has continued throughout the dispute with China. Sales to China were already slowed before the tariff announcements, but the pace of sales there has not moved much after the announcements either. But while China still dominates the soybean trade scene, other markets have created some momentum for soybean exports. Mexico and Indonesia have increased purchases of U.S. soybeans. Egypt has more than doubled soybean purchases over the marketing year. But as with corn, the

largest upward move has come from unknown destinations. Historically, those usually go to China, so the potential tariffs loom large here. However, it is good to see the potential for other markets to pick up some of the slack.

Figure 3. U.S. corn export sales (Source: USDA-FAS).

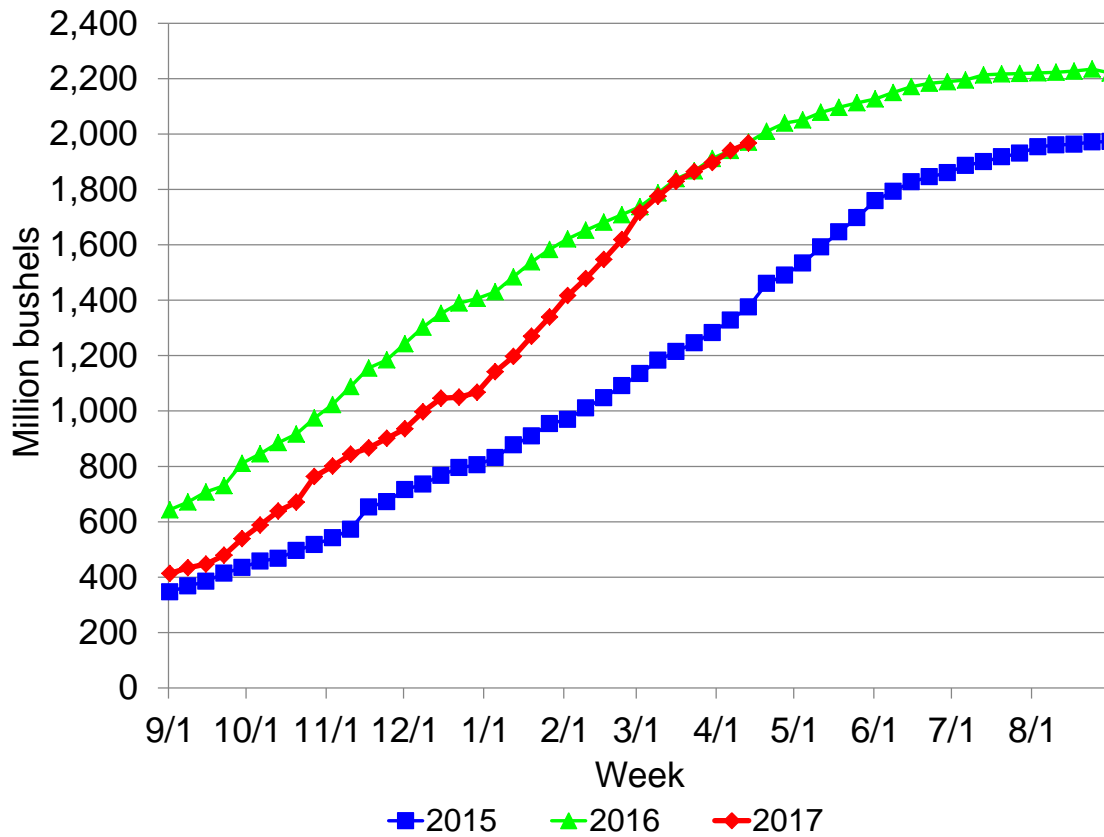
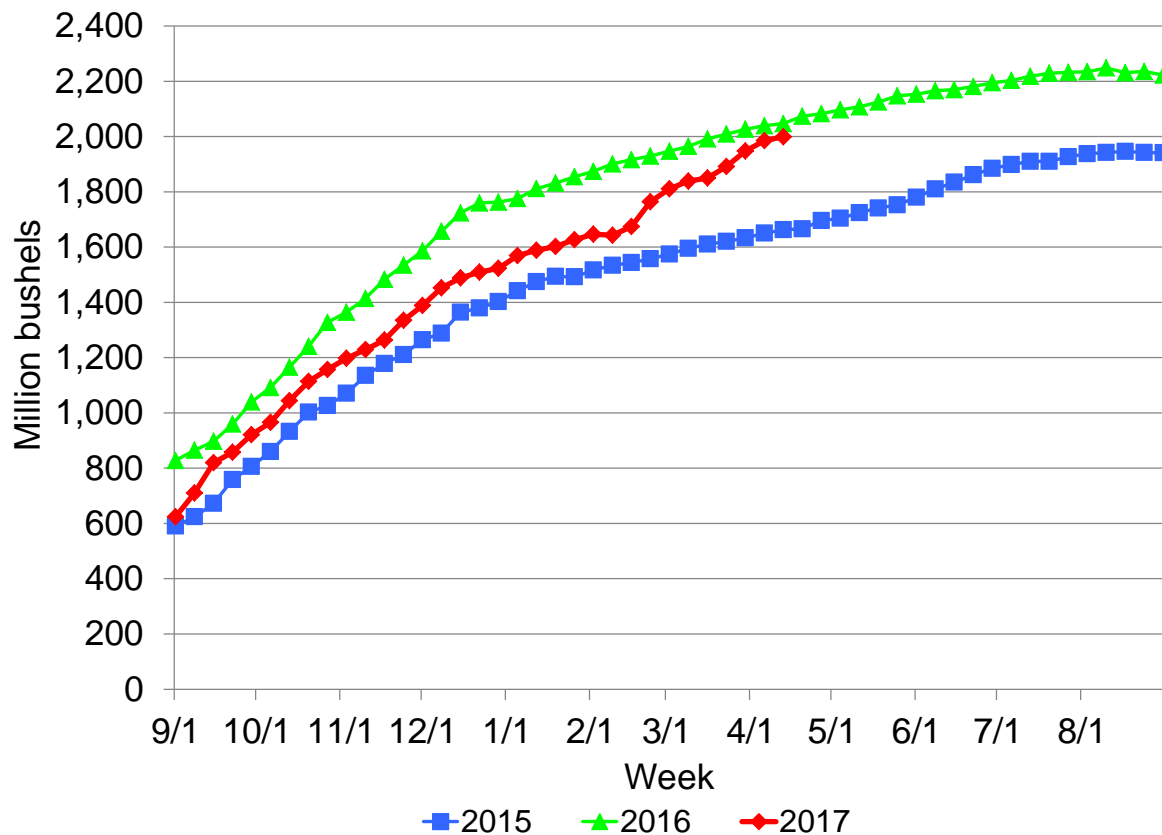
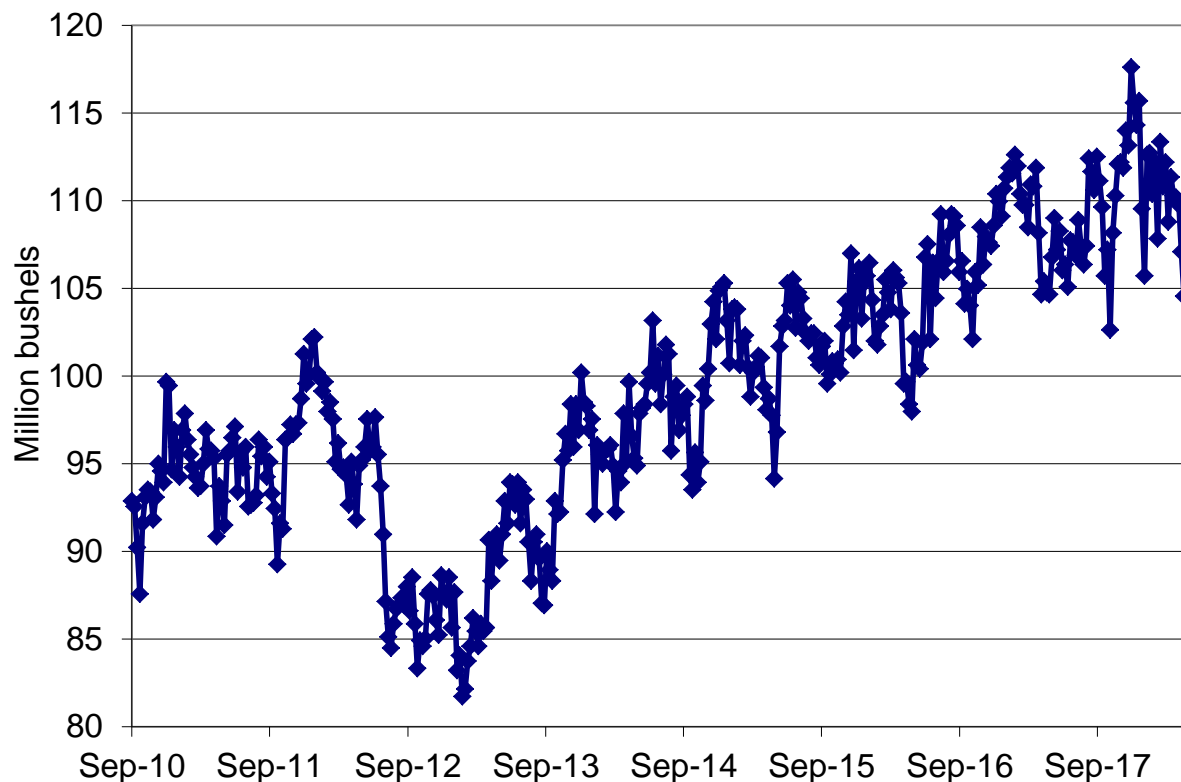


Figure 4. U.S. soybean export sales (Source: USDA-FAS).



The ethanol industry has also provided solid, but not really spectacular, support for the corn market. Even with the recent drop in ethanol production, corn utilization for biofuels remains at a robust 100 million bushels per week clip. Figure 5 shows the estimated weekly usage of corn for ethanol production. There is a somewhat regular pattern in the graph where ethanol production backs off in April. We experienced similar declines in 2016 and 2017. One of the questions surrounding this industry, beyond the policy uncertainty, is the production pathway forward. In 2016, the April slowdown was followed by a significant rebound through May, June, and July. In 2017, the rebound did not occur until later in the summer. Rising oil prices have offsetting impacts for the industry. Higher oil and gasoline prices create stronger incentives for drivers to use ethanol blends to lower fuel costs, but those same higher prices also tamp down overall fuel, and thus biofuel, use.

Figure 5. Ethanol's corn usage.



Combined the delayed planting and demand stories have excited enough market traders to put some higher prices on the futures boards. Both the December corn futures and November soybean futures have exceeded the highs from last year's contracts. Cash corn prices are running 20 cents above last year, while soybean prices are roughly 70 cents higher. So while cash flows remain challenging, the current situation is better than last year, despite all of the headwinds. Cash forward prices for harvest delivery for many locations across central Iowa are posted at levels that meet and exceed ISU's production cost estimates for corn and soybeans. The opportunity exists to lock in some positive cash flow and remove some concerns about price and policy uncertainty.

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