

# Iowa Farm Outlook

August 2019

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Ames, Iowa

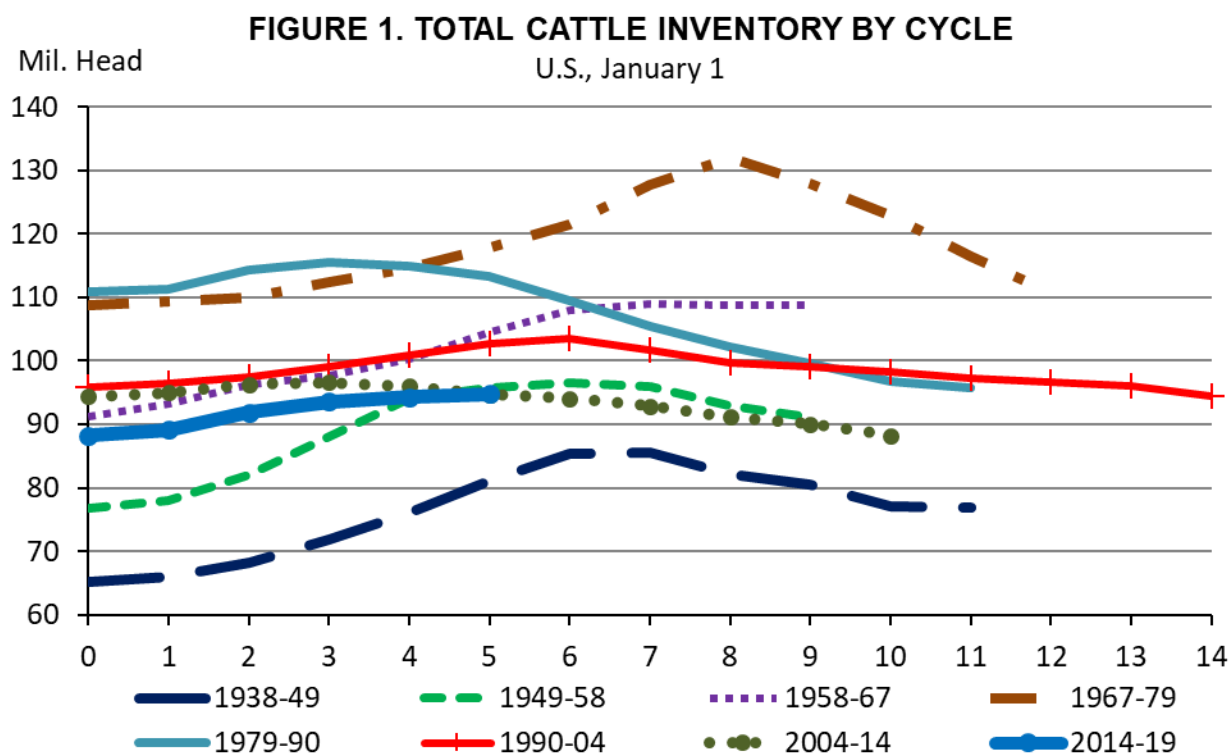
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## Has the Cattle Cycle Peaked?

The history of the cattle business has been one of cycles. Cow-calf producers expand inventories in response to profits. Producing more beef pressures prices, which brings losses. Producers liquidate herds to trim losses. Less beef brings profits, fueling the next expansion. Cattle cycles are measured from one inventory trough to the next trough.

Knowledge of cattle cycles is important. National cattle supplies influence cattle prices at the local level. The focus is on playing the long game. The stage of the cattle cycle won't help predict next week's prices. However, studying how cyclical beef supply changes may impact prices over the next several years can aid your long-run planning as you evaluate the direction your business should take in the future.

The current cycle began in 2014 when the January 1 U.S. cattle and calf inventory bottomed at 88.2 million head (Figure 1). That was the smallest total cattle inventory since 1952. The current cycle entered its sixth year in 2019. Most past cycles ranged from 9 to 14 years.



Data Source: USDA-NASS.

Prices for all market classes of cattle were record high in 2014 and were the price highs for this cycle. Tight cattle and beef supplies buoyed prices. Producers held more heifers for breeding and culled fewer beef cows to rebuild herds. Both bolstered prices. Furthermore, strong domestic and export demand for beef helped drive prices to their cyclical peak. Strong prices triggered expansion that upped the Jan. 1, 2015 total cattle inventory.

*Higher production flattens cycle*

No two cattle inventory cycles have been exactly the same. In fact, cycles are getting flatter. The reason? Producers are producing more beef from fewer cattle. The market no longer needs the large cattle inventory increases of yesteryear to boost beef supply enough to pressure prices and signal producers to contract herds. The worldwide market environment that the beef industry now operates in also causes more price volatility than in past cycles, which boosts risk for retaining more heifers and/or investing in additional cows.

USDA released its semi-annual Cattle report on July 19<sup>th</sup> with estimated July 1 national inventories of all classes of cattle and calves (Table 1). This report provides the most recent insights into the ever-evolving cattle inventory picture and current state of the cattle cycle. The inventory estimates suggest that expansion of the U.S. beef herd may have plateaued.

**Table 1. Cattle Inventory by Class and Calf Crop**

July 1 inventory *	2018	2019	2019 as % of 2018
Cattle and calves	103,000.0	103,000.0	100.0
Cows and heifers that calved	41,800.0	41,700.0	99.8
Beef cows	32,400.0	32,400.0	100.0
Milk cows	9,400.0	9,300.0	98.9
Heifers 500 pounds and over	16,300.0	16,400.0	100.6
For beef cow replacement	4,600.0	4,400.0	95.7
For milk cow replacement	4,200.0	4,100.0	97.6
Other heifers	7,500.0	7,900.0	105.3
Steers 500 pounds and over	14,500.0	14,700.0	101.4
Bulls 500 pounds and over	2,100.0	2,100.0	100.0
Calves under 500 pounds	28,300.0	28,100.0	99.3
Feeder cattle outside feedlots	37,000.0	37,100.0	100.3
Cattle on feed	13,300.0	13,600.0	102.3
Calf crop **	36,402.7	36,300.0	99.7

\* 1,000 head, \*\* First half of 2019 estimate plus second half of 2019 expectations.

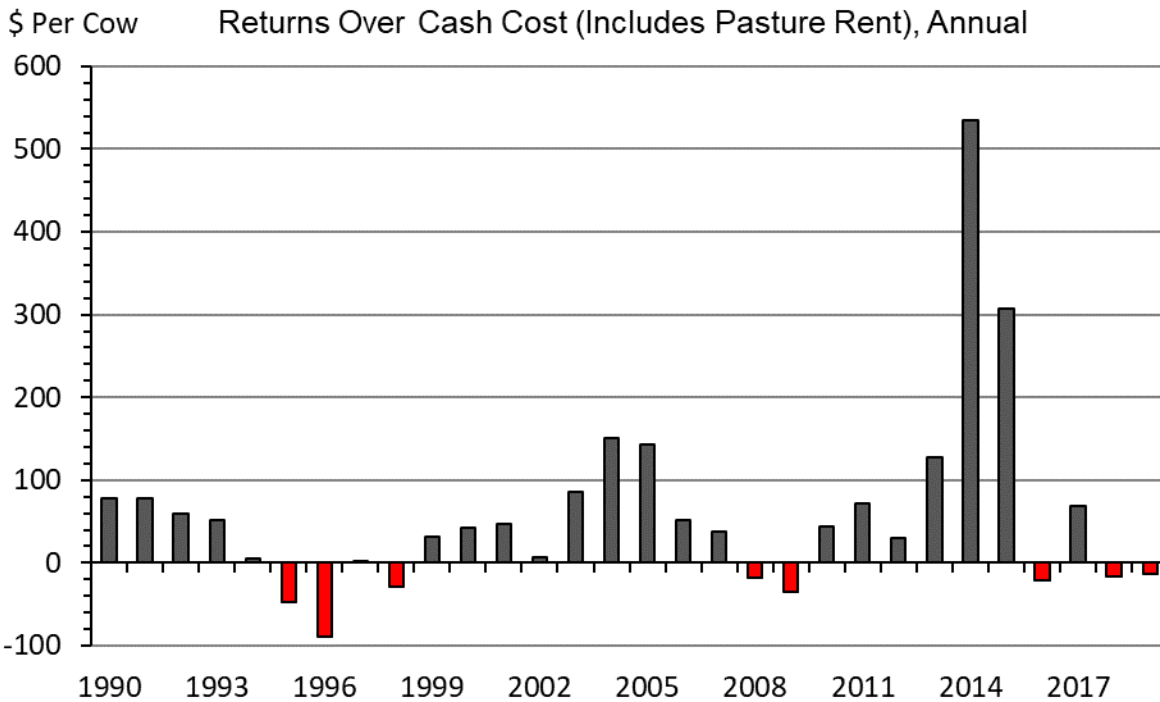
Data Source: USDA-NASS.

Full report: <https://downloads.usda.library.cornell.edu/usda-esmis/files/h702q636h/p2677603p/08612z925/cat0719.pdf>

The July 1, 2019 U.S. all cattle and calves inventory was unchanged from July 1, 2018, at 103.0 million head. That's 7.3 million more cattle than the 95.7 million head cyclical mid-year inventory low on July 1, 2014. Commercial beef production in 2019 is projected at 27.2 billion pounds, up 2.9 billion pounds or 12.1% since 2014.

The beef cow herd is the foundation of the total cattle inventory and at 32.4 million head was also unchanged from a year ago. The big news was the number of heifers held for beef cow replacement, at 4.4 million head, was 200,000 head or 4.3% smaller than last year. Combine this retention rate with beef cow slaughter up 2.2% year to date and they collectively point to a nationally stable to lower beef cow herd. Cow-calf producers had a good string of profitable years in this cycle (Figure 2). Their balance sheet strength may delay further breeding stock declines, particularly in regions where drought and poor pasture conditions are not limiting factors.

**FIGURE 2. ESTIMATED AVERAGE COW CALF RETURNS**



Data Source: USDA & LMIC, Compiled by LMIC

USDA projects the 2019 calf crop near 36.3 million head. First half 2019 live births totaled 26.5 million, with about 9.8 million more calves to be born in the second half. Compared to 2018, 102,700 fewer calves are expected to be born this year, which is a 0.3% decrease.

Milk cow numbers were about 1.1% lower than July 1, 2018. Dairy replacement numbers were 2.4% lower. The declining dairy cow herd certainly contributes to the lower estimated 2019 calf crop and eventually that will put fewer dairy-bred calves into the feeder cattle market.

The number of cattle outside feedlots available for placement is approximately 100,000 head, or 0.3%, more than a year ago. This slightly larger supply should not cause a bear market (lower prices) on the horizon. Corn and fed cattle prices will help guide the feeder cattle market. Expectations of higher corn prices this fall and winter will temper interest in bidding up feeder cattle. Similarly, sluggish live cattle futures prices will weigh on feeder cattle prices into the fall marketing period.

Cattle on feed are at record large levels that would be expected at the peak of a cattle cycle. The 13.6 million head as of July 1 are 300,000 head or 2.3% larger than last year. However, dressed weights have moderated over the past few years and especially in the past few months, which has softened some of the impacts of larger cattle inventories on total beef production. USDA grading data show the percent of cattle grading choice and prime dropped below the last two years for this time frame. This all indicates cattle feedlots are very current on marketings.

### *Managing more market volatility*

Few people predicted cattle prices would rise as quickly as they did during 2014, or tumble as rapidly as they did in the years to follow. These price swings represented significant dollars in cattle revenue and meant the difference between profit and loss for many producers. This has been a unique cattle cycle to say the least.

Some market participants believe that the cattle cycle is dead or no longer exists. I'm not ready to bid farewell to the notion of the cattle cycle. The extreme market swings of recent years add to our understanding of the implications of fluctuating herd inventories in a global and ever-dynamic marketplace.

At this point in the cattle cycle, we should expect relatively lower markets and tighter margins compared to a couple of years ago. Challenging times typically show who the better managers are and this will likely play out in the next several years. A whole host of unexpected and unpredictable events will affect the beef industry and cause cattle producers to manage from one event to the next. Such changes could be positive or negative.

Producers should consider ways to limit potential downside risk in their marketing plans. They should also leave open the possibility of benefitting from potential upside price movements. Such strategies may leave money on the table at times, but should also help avoid huge losses at other times that could cripple the financial well-being of their operations.

### *Cattle numbers declining in Iowa counties*

County-level estimates for cattle inventories are published by USDA National Agricultural Statistics Service Field Offices. The county-level inventory estimates are for all cattle and calves, beef cows and milk cows. The latest estimates are for January 1, 2018–2019 and were released on June 13<sup>th</sup>. These county estimates are much more current than those of the only other source of county data, the Census of Agriculture, with 2017 being the most recent one. That makes the NASS estimates more useful for knowing current inventories and any changes underway.

As of Jan. 1, 2019, Iowa had the eighth largest cattle inventory in the U.S. at 3.95 million head, or 4.2% of the nation's cattle. Iowa's top cattle county, Sioux, accounts for 420,000 head or 10.6% of the state's total cattle numbers. Other top counties include (in ranking order): Lyon (190,000 cattle and calves), Dubuque (130,000), Delaware (120,000), Plymouth (110,000), Jackson (98,000), Winneshiek (94,000), Woodbury (77,000), Clayton (73,000), Pottawattamie (73,000) and Clinton (70,000). All Iowa counties saw constant or inventories decline from 2018 to 2019. The largest total cattle inventory declines occurred in Delaware, Dubuque, Lyon, Plymouth and Sioux counties, each losing 5,000 head of cattle and calves.

Iowa is the tenth leading beef cow state in the U.S. with 950,000 beef cows as of Jan. 1, 2019. While cow-calf production occurs in every Iowa county, greater numbers of beef cows tend to be concentrated in southern Iowa and along the eastern and western sides of the state where more forage and grassland production occurs. Several counties in Iowa have beef cow inventories greater than 16,000 head in 2019. These include: Ringgold (27,000 beef cows), Jackson (24,500), Union (19,600), Allamakee (19,500), Clayton (19,100), Crawford (18,900), Lucas (18,200), Clarke (17,000) and Jones (16,500).

Nationally, Iowa ranks twelfth in dairy cow inventory with 220,000 head on Jan. 1, 2019. Dairy operations of various sizes and structure are located throughout the state, with the heaviest concentrations of production located in northwestern and northeastern Iowa. Sioux county has the largest milk cow inventory at 35,500 head with Dubuque (22,000 milk cows), Winneshiek (16,500), Allamakee (13,100) and Clayton (11,700) rounding out the top five.

It should be noted that just as with the Census of Agriculture, several county beef cow and milk cow inventory estimates are not reported due to confidentiality restrictions. These are then published in a "Combined counties" category.

County estimates for cattle inventories are developed using county level livestock information from the Census of Agriculture, administrative data, and current year state-level Agricultural Statistics Board (ASB) inventory and production estimates. Cattle inventory estimates for 2018-2019 for Iowa counties are available at: [https://www.nass.usda.gov/Statistics\\_by\\_State/Iowa/Publications/County\\_Estimates/index.php](https://www.nass.usda.gov/Statistics_by_State/Iowa/Publications/County_Estimates/index.php). Historical and current estimates are also available in USDA's Quick Stats database, <https://quickstats.nass.usda.gov/>, and can be viewed or downloaded in a spreadsheet.

## In A Holding Pattern Until Mid-August

We are again living that famous blessing/curse, “May you live in interesting times.” Some news items are very similar to last year. Trade disputes and the lack of progress on trade agreements dominates the demand discussion. There is a round of trade aid on the way. Weather issues have significantly impacted farmer decisions. Old crop supplies remain substantial. But a few things have changed. The weather issues were large enough that planted acreage is still unknown. The corn and soybean crops are generally one-to-two weeks behind in development, so we’ll need a long fall to achieve full maturity. But the largest change is the return of potential profitability in the corn market, with cash prices hovering around \$4 per bushel for harvest delivery. While the soybean market continues to feel the pressure from the U.S.-China squabble, corn prices have strengthened enough to offer good returns throughout the summer.

The combination of stronger corn prices and the U.S.-China dispute have eroded crop usage. Corn export sales are down nearly 16% from last year, with much of that decline occurring in the past couple of months as prices increased. It’s mainly the smaller markets where we are seeing the sharpest pullback, with corn sales to countries outside of the top six markets dropping by roughly 40%. However, we have also seen reductions in our top markets as well. South Korean sales have dropped nearly 35%, Peru (yes, Peru is our 5<sup>th</sup> largest corn market at the moment) is off by 36%, and Taiwan is down 19%. These decline are only partially offset by sales increases to Mexico, Japan, and Colombia. Soybean export sales took the big hit last fall and really haven’t recovered much since then. Sales to China are still 500 million bushels below last year’s pace (a common refrain for the past 9 months). Overall, total soybean export sales are roughly 350 million bushels below last year, as increased sales to the European Union, Mexico, Egypt, and Japan reduce the deficit.

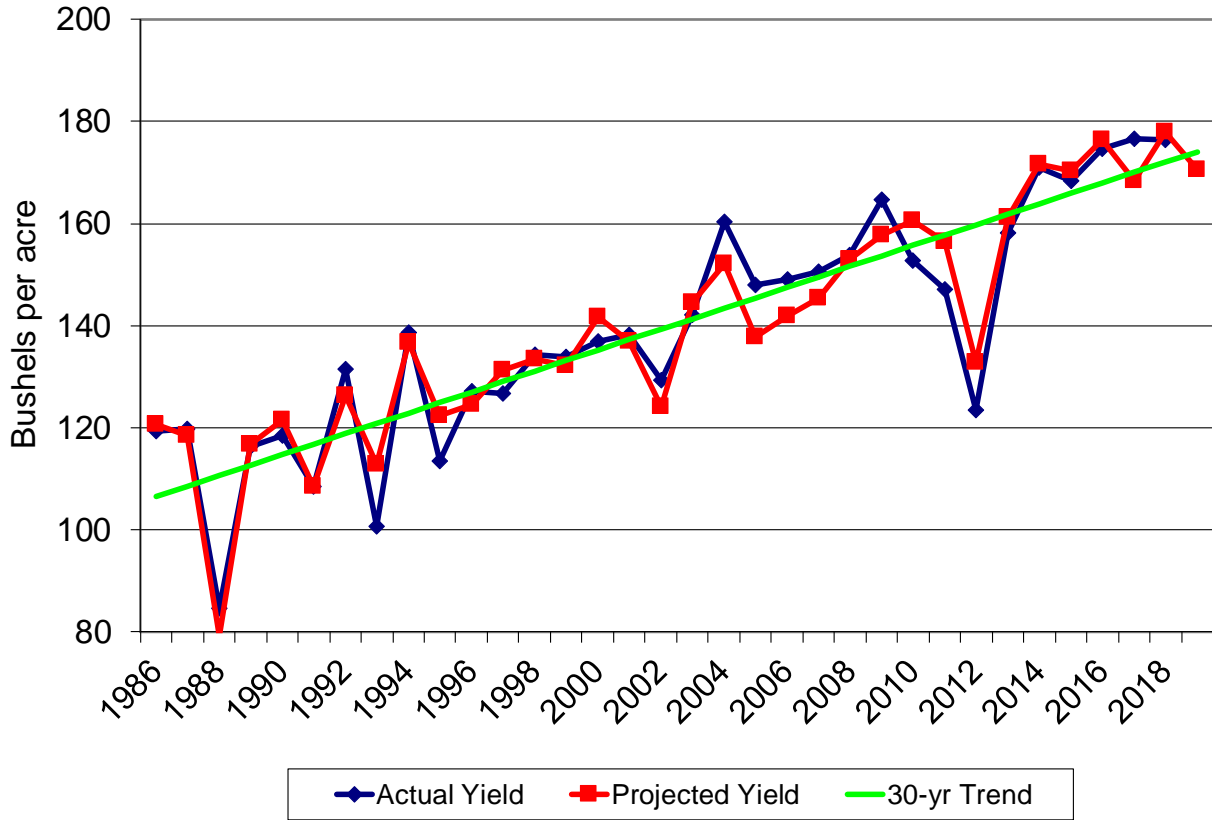
And other cracks are starting to show in crop usage. Feed and residual usage for corn is projected to decline as the growth prospects for the livestock sector have slowed. The ethanol industry is feeling the squeeze of higher corn prices, but stagnate ethanol prices. The lower margins, in combination with the concerns about the Renewables Fuels Standard (RFS) waivers, may put a crimp on the flow of corn through the ethanol plants. So while the weather conditions may have lowered supplies, prices and trade prospects are limiting demand.

The big story over the next few weeks will be the guessing game, trying to figure out crop production this fall. Usually, the crop conditions statistics released in the Crop Progress reports provide a great yardstick with which to measure the crops. But with the delays in planting and maturity this year, any estimates should be taken with the entire salt block, not just a grain of salt. As of July 29<sup>th</sup>, 58% of the nation’s corn crop and 54% of the nation’s soybean crop was rated “Good” to “Excellent” in the USDA Crop Progress report. Those ratings are down significantly from last year and the 5-year average. As I have done over the past few summers, I have used the late July crop conditions reports to project the yield of the upcoming crops. And the projections this year show crops that are hovering just below the trendline. Figures 1 and 2 show the results of those projections for the upcoming harvest. In the figures, the smooth green line represents the 30-year trend for yields, the blue line with diamonds provides the actual yields since 1986, and the red line with squares shows the projected yields from the model, based on the crop conditions.

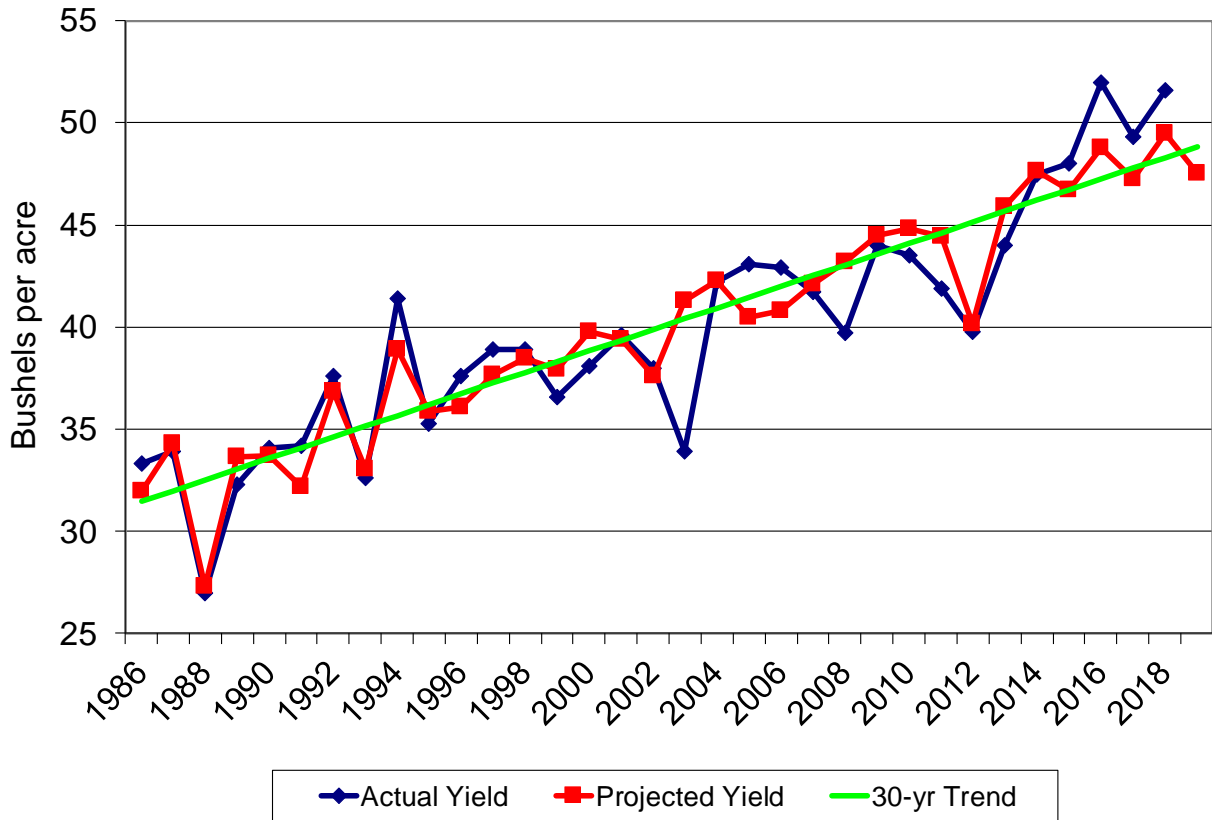
For corn, the 58% Good to Excellent rating translates to an average national yield of 170.5 bushels per acre. If realized, that would be approximately 6 bushels below last year’s yield of 176.4 bushels per acre and roughly 3.5 bushels below the 30-year trend. For this projection to hold up, we will need a longer grain-fill window than usual. Any damage done by the recent heat wave and the potential for a freeze to catch this crop before maturity are significant limiting factors to where yields may end.

For soybeans, the 54% Good to Excellent rating points to a national yield of 47.5 bushels per acre. That would be roughly 4 bushels below last year and 1.3 bushels below the 30-year trend. As with corn, a deep autumn would likely be essential to achieve this yield. August and September precipitation will greatly affect the soybean yield outlook. The crop conditions model for soybeans is much less precise than the corn model and the timing is different as well. For corn, the historical prediction accuracy is at its best with the late July reports. For soybeans, the model continues to improve up to harvest.

**Figure 1. Corn yield projection, based on crop conditions.**



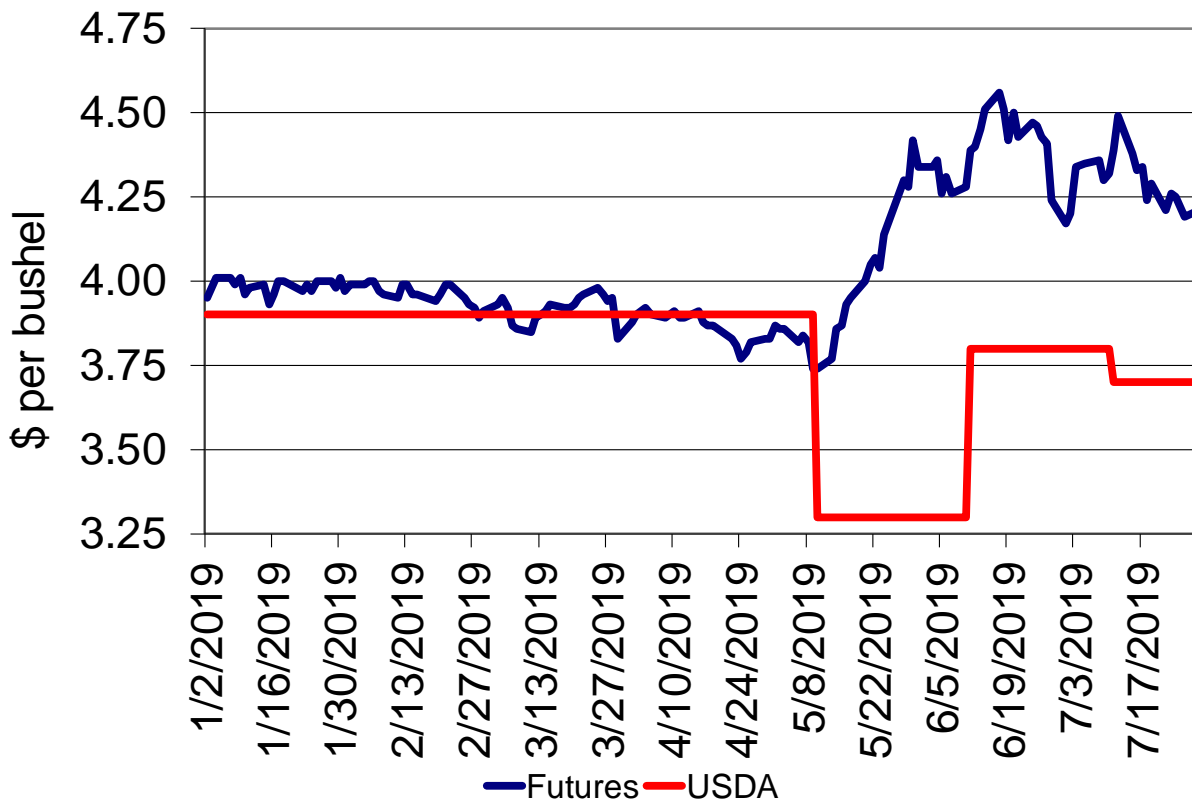
**Figure 2. Soybean yield projection, based on crop conditions.**



The combination of the weather premium in corn futures and the great uncertainty in plantings has created a significant gap between USDA's and futures-based price projections. As USDA's acreage estimates have bounced up and down over the past few months, so have their price projections. Meanwhile, corn futures moved higher with the planting delays and have held on to a sizable portion of those gains as we have moved through the summer. As we end July, futures are pointing a 2019/20 season average price in the \$4.20 range, while USDA have placed its' marker at \$3.70. The clarification on acreage with the next set of USDA reports should reduce this gap some, but I would not expect a major reduction. As the July WASDE report showed, a shift of nearly 2 million acres in plantings only translated into a 10 cent movement in price.

For soybeans, it had been a very similar story to last year. The gap between the futures-based projection and the USDA projection had nearly disappeared in May. But the trade and crop conditions opened up a sizable gap between the estimates. Early in the year, futures had been more bullish for soybeans. But unlike last year, futures have rebounded to remain more bullish than USDA. While the USDA has been slowly moving its' price estimate up to \$8.40 per bushel, soybean futures have been pointing to a \$9 season-average price for most of the summer.

**Figure 3. Projected 2019/20 season-average prices for corn.**



Margin estimates for the 2019 crops had been positive for corn for most of 2018, while soybean margins have drifted negative for the most of the year. The planting delays provided a significant spark for corn and a minor one for soybeans. As the markets currently stand and based on trend yields for both crops, corn margins are running at nearly \$100 per acre, while soybean margins are running at \$25 per acre loss. While futures have declined over the past couple of weeks, profitable prices and decent marketing opportunities for corn remain on the board. Soybean pricing will continue to be challenging at best. The trade aid will help there. But without significant movement from China or an early freeze, it's hard to find a positive pricing story for soybean.

Figure 4. Projected 2019/20 season-average prices for soybeans.

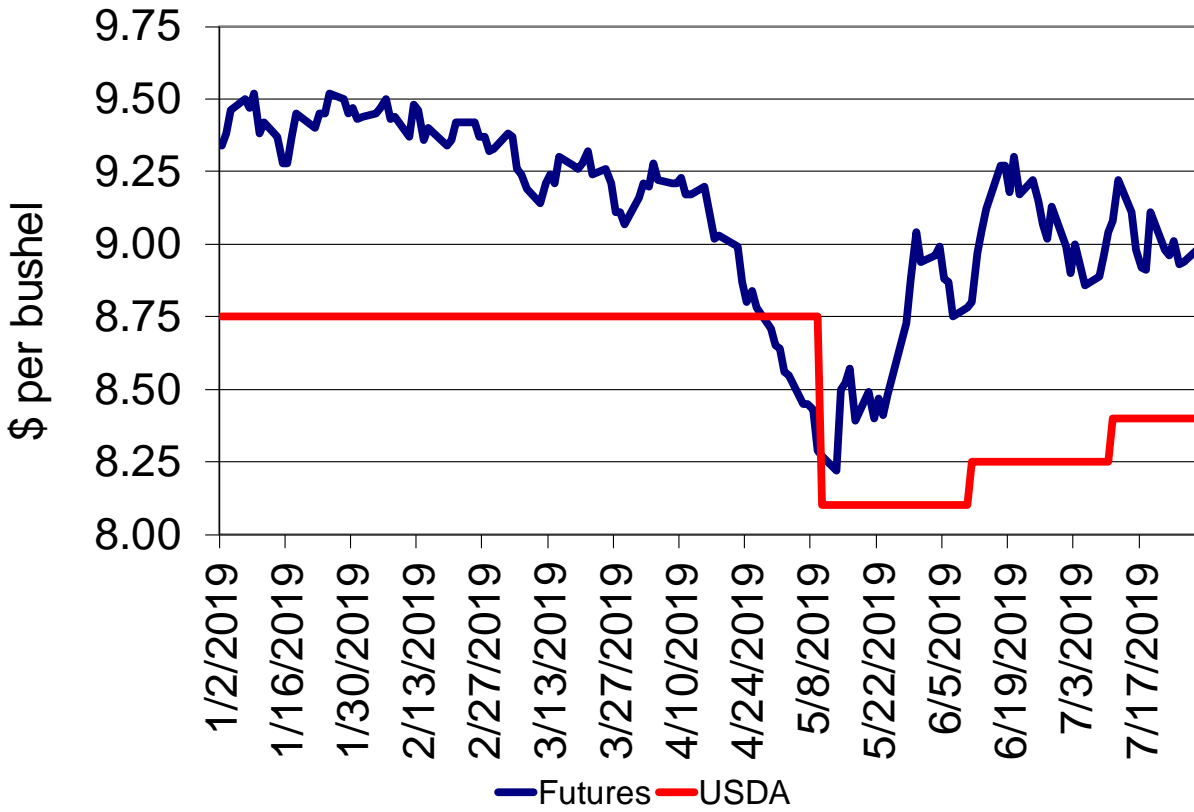
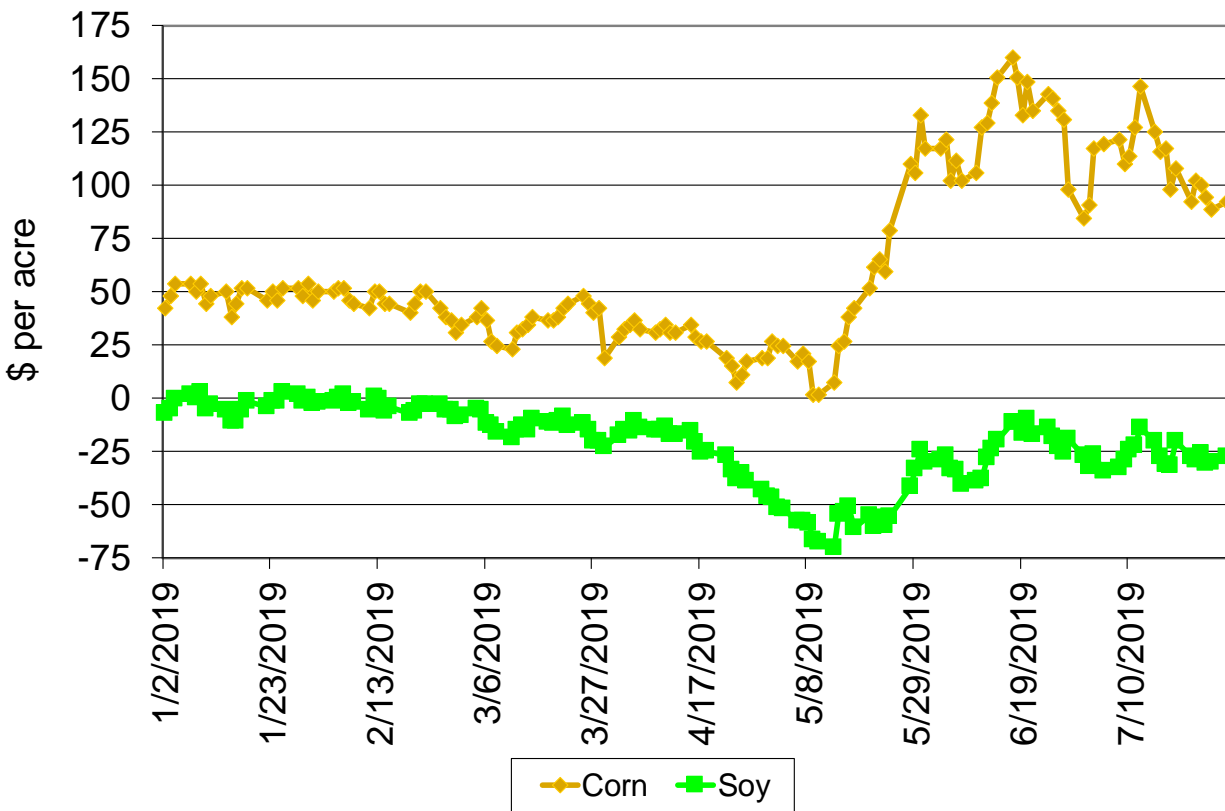


Figure 5. 2019/20 projected crop margins.





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