Iowa State University
Extension and Outreach

Iowa Farm Outlook

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Stronger Hog Prices Possible Despite More Production

The hog outlook for 2019 is for the fifth consecutive year with record U.S. pork production. And it's not just more pork, it's total red meat and poultry. Beef producers have expanded aggressively. Beef production in 2019 should surpass the record set in 2002. Total poultry production has set records the last six years and 2019 will likely be the seventh. Prices going forward will either depress, or promote, further growth within each respective industry.

These record supplies underscore how important demand will be in determining 2019 livestock and poultry prices. So far, for pork, demand appears to be more than keeping pace with rising production. The market expects this strength to carry into 2019. Evidence of expectations of robust demand for U.S. pork—from both domestic and foreign consumers—is implicit in 2019 CME lean hog futures contract prices. On average, the 2019 contracts are trading higher than where the same contract months for 2018 expired at, even though pork production is expected 2% to 3% higher in 2019.

The Quarterly Hogs and Pigs report issued by USDA's National Agricultural Statistics Service on December 20th showed the highest December 1 inventory of hogs and pigs since 1943. The inventory of all hogs and pigs was 74.55 million head, 1.9% higher than on December 1, 2017 (Table 1).

Table 1. USDA Quarterly Hogs and Pigs Report Summary

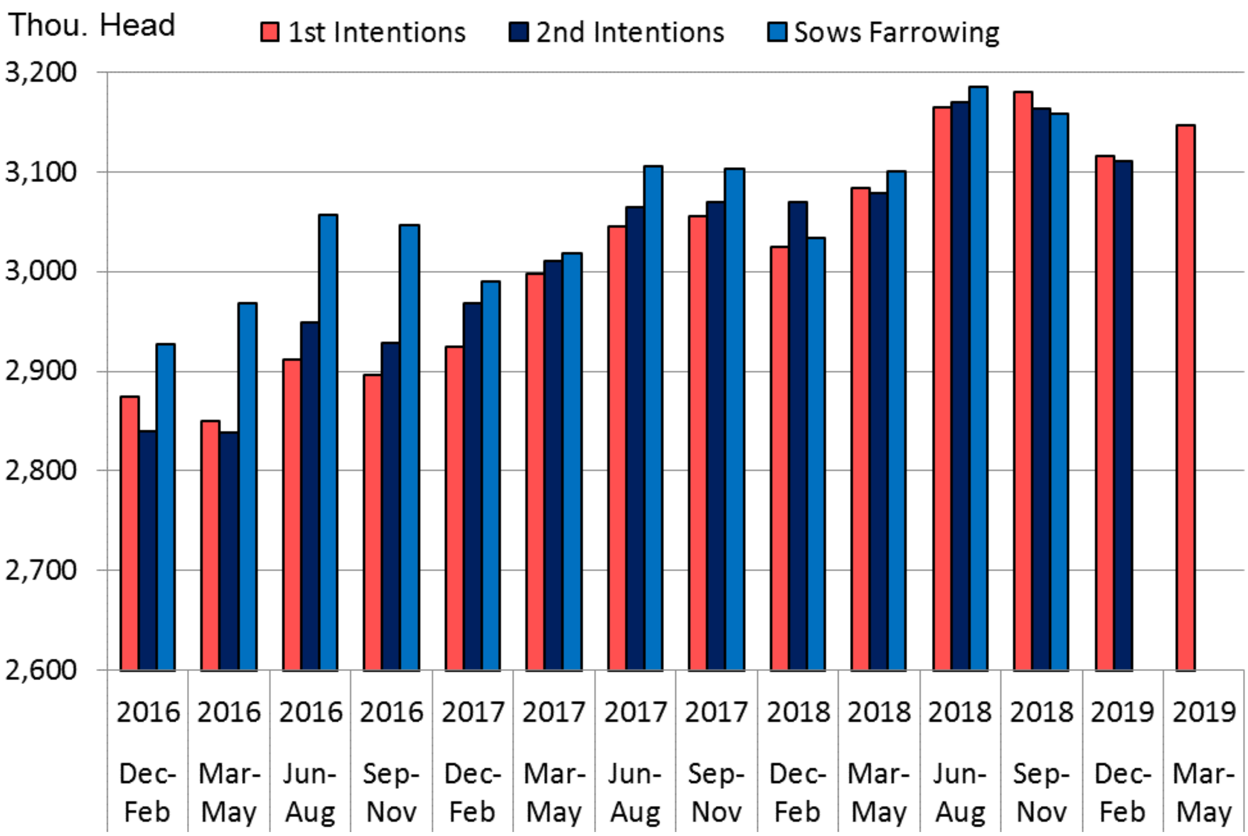
	U.S.				Iowa		
	2017	2018	2018 as % of '17		2017	2018	2018 as % of '17
Dec 1 inventory *							
All hogs and pigs	73,145	74,550	101.9		22,800	23,300	102.2
Kept for breeding	6,179	6,326	102.4		1,000	1,020	102.0
Market	66,966	68,225	101.9		21,800	22,280	102.2
Under 50 lbs	21,407	21,599	100.9		5,800	5,700	98.3
50-119 lbs	18,544	18,932	102.1		6,870	7,100	103.3
120-179 lbs	13,925	14,412	103.5		5,080	5,260	103.5
180 lbs and over	13,089	13,282	101.5		4,050	4,220	104.2
Sows farrowing **							
Sep – Nov [1]	3,103	3,158	101.8		550	560	101.8
Dec – Feb [2,3]	3,034	3,110	102.5		550	520	94.5
Mar – May	3,100	3,147	101.5		560	520	92.9
Sep – Nov pigs per litter	10.74	10.76	100.2		11.15	11.20	100.4
Sep – Nov pig crop *	33,328	33,978	102.0		6,133	6,272	102.3

Full report: http://usda.mannlib.cornell.edu/usda/current/HogsPigs/HogsPigs-09-27-2018.pdf.
* 1,000 head; **1,000 litters; [1] intentions for 2018; [2] December preceding year; [3] 2019 intentions.

Producers have been expanding since 2011. Early in the decade rising domestic and foreign demand for pork fueled profits. Solid earnings accelerated breeding herd inventory growth in 2014, 2015 and 2016. Producers invested capital in new facilities to boost volume and capture more profits. Rising production from new facilities further accelerated inventory growth.

Interestingly, the September-November 2018 pig crop, which was derived from record litter rates and sows farrowing that were 1.8% higher than a year ago, did not yield an even larger pig crop number. The September-November 2018 pig crop was 33.978 million pigs, up 2.0% from a year ago. For the last several quarters actual sows farrowing have been larger than the previously estimated farrowing intentions. This was not the case for this quarter as 5,000 fewer sows farrowed than were projected by the September report and 22,000 fewer than were projected by the June report (Figure 1). The Hogs and Pigs survey asks producers, how many sows and gilts are expected to farrow in the next two quarters. It is certainly possible that some producers chose not to fully follow through on their earlier stated intentions.

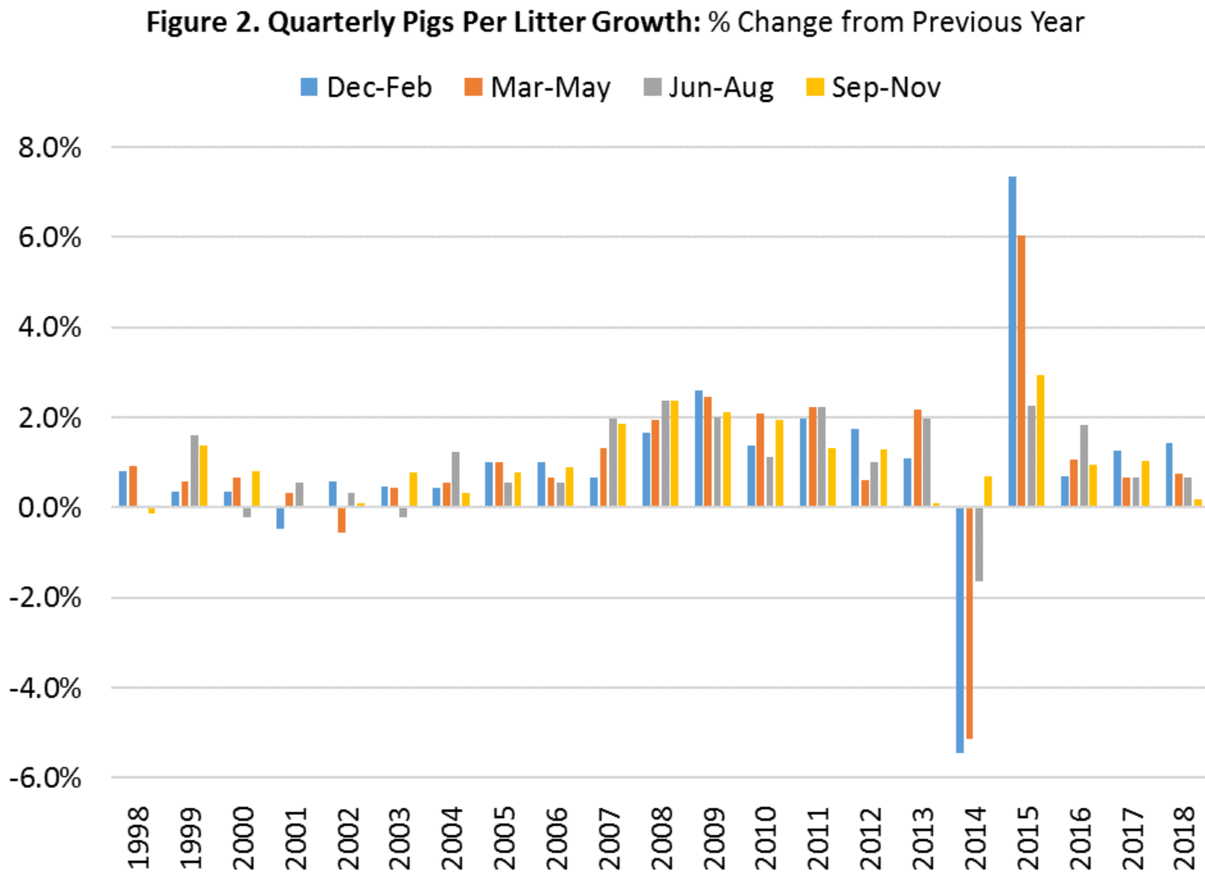
Figure 1. Quarterly U.S. Sows Farrowing and Intentions



Source: USDA-NASS Quarterly Hogs and Pigs Reports.

Every December, USDA reviews the quarterly reports for the year. It could also be the case that this review led to recalibration of the sows farrowing estimates and going forward intentions will be better predictors.

The productivity piece driving the September-November 2018 pig crop is pigs saved per litter. While this estimate of 10.76 pigs was record large, it was only 0.2% higher than a year ago (Figure 2). This was the smallest year over year rise since PEDV brought annual decreases in 2014. The September-November 2018 litter rate growth more closely resembles the annual increases back in the late 1990s and early to mid-2000s. Litter growth rates have been below 1% each of the last three quarters in 2018, a step-back from the 1% to 1.5% growth the last couple of years.



Source: USDA-NASS Quarterly Hogs and Pigs Reports.

Litter size is usually smallest in the first litter, rises to a maximum between the third and fifth litter and then remains constant or declines slightly with older parities. Gilt retention has been a topic of discussion in the industry and anecdotal evidence suggests that producers are indeed holding back more gilts. The previous Hogs and Pigs reports in 2018 implied a notable increase in gilt retention. These gilts now being introduced into the breeding herd could be slowing down litter rate growth in the short-term.

Operation size has been shown to impact litter size. Pigs per litter by size of operation depicts the ability and efficiency of different sized operations to produce pigs. Smaller operations tend to have smaller litter sizes and larger operations that are more efficient produce larger litters. For the 2017 production year, the average pigs saved per litter was 10.59. Pigs saved per litter by size of operation ranged from 7.85 for operations with 1-99 hogs and pigs to 10.65 for operations with more than 5,000 hogs and pigs. Starting in March 2018, the pigs per litter by size of operation data was discontinued as part of the Hogs and Pigs report. Thus, we are unable to dissect if the slowing litter rate growth, on average in 2018, is operation size specific or is an industry wide occurrence.
The Hogs and Pigs report provides quarterly pigs per litter estimates for the 16 major hog producing states. The report also aggregates the remaining 34 states (labeled Other States) to comprise the U.S. average. The September-November 2018 litter rate declined in Colorado, Illinois, Michigan, Minnesota, Nebraska, North Carolina, Ohio, and Oklahoma compared to one year ago. Colorado seen the largest year over year decline at 5.9%. The Iowa pigs saved per litter estimate increased 0.4% which was similar to the U.S. average increase of 0.2%.

The slowing rise in litter rates in 2018 is no indictment of productivity efforts. Many factors could slow rate of growth in the number of pigs saved per litter, including production system changes, genetics, disease incidence, labor issues, and weather implications of when the sows were bred. This is a number to watch to see if this is a short-term event or something that continues.

Commercial slaughter and price forecasts

Table 2 contains the Iowa State University price forecasts for the next four quarters and the quarterly average futures prices based on December 21, 2018 settlement prices. The futures price forecasts are adjusted for a historic Iowa/Southern Minnesota basis. The table also contains the projected year over year changes in commercial hog slaughter.

Table 2. Commercial Hog Slaughter Projections and Lean Hog Price Forecasts, 2019

	Year-over-Year Change In Commercial Hog Slaughter (percent)	ISU Model Price Forecast, Negotiated IA/So MN ($/cwt)	CME Futures (12/21/18) Adjusted for Negotiated IA/So MN Basis ($/cwt)
Jan-Mar 2019	2.82	60-64	60.29
Apr-Jun 2019	2.31	70-74	72.94
Jul-Sep 2019	3.77	71-75	74.76
Oct-Dec 2019	1.65	58-62	59.77

Lee Schulz

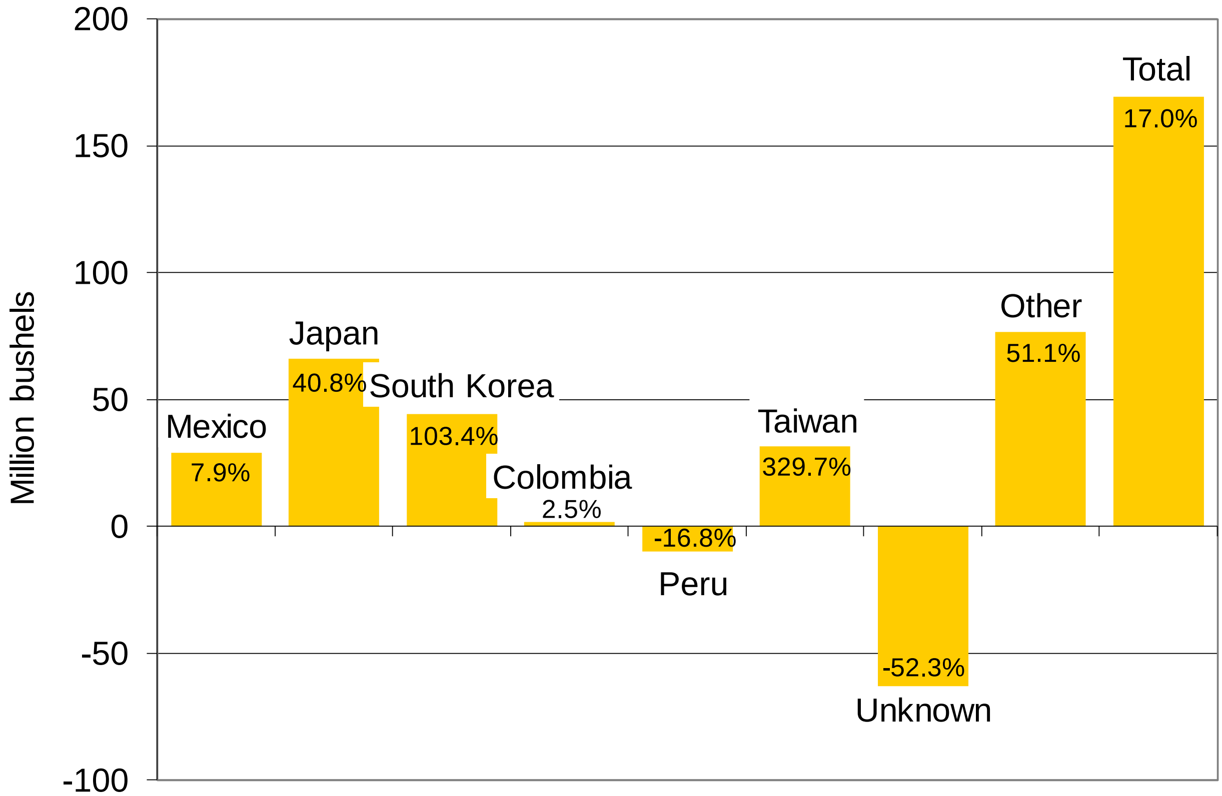
Trade Will Be The Key to 2019

It's amazing how many things change, but the basic story remains the same when it comes to the crop markets. The 2018 calendar year was very challenging from a marketing perspective. The ongoing trade dispute with China and the ever-changing array of trade policies have created a lot of uncertainty and opportunity. Some major markets have definitely taken a step back, while newer or smaller markets have expanded to fill at least some of the void. Domestic usage has continued to chew through more crop. And production remains robust. But in the end, we find ourselves in a familiar, but uncomfortable, spot, searching for prices to cover breakeven.

USDA's first glimpse into 2019 continues a lot of those storylines. Projections of another strong production year, with nearly 15 billion bushels of corn and 4 billion bushels of soybeans. Domestic usage is expected to be steady to slowly rising. And as was the case last year, international usage will hold the key to market direction. Export projections for both crops are strong, but USDA shows a small reduction for corn and a sizable recovery for soybeans. If USDA's projections hold true, 2019/20 ending stocks shrink and season-average prices rise. But the results are mixed, with corn covering production costs, but soybeans falling short.

Figures 1 and 2 detail the export pattern shifts between the 2017 and 2018 crops. The countries in the figures are the top 6 export markets for each commodity this year. The percentages listed by the country names show the percent change in exports to that country year-over-year. So, for example, Mexico is our top corn export market and corn exports are up, roughly 40 million bushels or 8 percent from last year. As the corn figure shows, international usage of U.S. corn has been on the rise. Most of our major markets are up significantly, with only Peru in negative territory. The largest decline has been in export sales to unknown destinations, but that decline has been offset by gains in smaller markets. The "Other" category combined all of the markets outside the top 6 and the unknown category, so it's a combination of small and emerging markets. With roughly a third of the marketing year in the books, we have seen a 75 million bushel increase in corn sales to these smaller markets. That's helped boost total corn export sales over 150 million bushels higher this year. Global income growth over the past decade has driven meat demand growth, as evidenced by our expanding meat exports, which has also, in turn, increased international feed demand. U.S. corn has been moving out of the country at a strong pace for the past couple of years. The 2016 and 2017 marketing years were the 2nd and 3rd best years in terms of the number of bushels sold internationally. The sales thus far for the 2018 crop maintain that pace. And the projections going forward suggest that we should expect that trend to continue.

Figure 1. Corn export shifts (Source: USDA-FAS).



For soybeans, the data show one pattern and the projections indicate another. As Figure 2 shows, soybean exports have suffered a significant drop. As China represents, at one time, roughly 60 percent of U.S. soybean exports, the shifts there basically determine the overall pattern. And thus far, the pattern is for fewer beans moving to China. The soybean tariffs have reshaped the international soybean markets. China moved to source more beans from South America. That left markets that typically buy South American soybeans to search for other sources, often leading to those buyers back to the U.S. While there has been some recent movement in the U.S.-China trade relationship, the damage already done is substantial. As of the latest export sales report (due to the government shutdown, it's the Dec. 20th report), soybean sales to China are down by over 700 million bushels. For a basis of comparison, Illinois' soybean production estimate for 2018 is 688 million bushels. So China has dropped an "Illinois". But looking beyond China, we have been selling more to many other markets. The European Union and Mexico have significantly increased purchases. China's run on South American soybeans put Argentina into the soybean import business, as they are currently our 4th largest market this marketing year. And like with corn, those "Other" markets have surged higher as well. The growth in non-China markets has offset nearly half of the Chinese decline. USDA's projections depend on continuing surge from non-China markets, but also significant recovery in Chinese purchases over the next several months.

The combination of large supplies and export uncertainty has reduced crop prices over the fall and winter. Figure 3 displays projected crop margins for the 2018 crops, using futures prices and the average current crop basis across the state. As the graph shows, the 2018 crops continue the run of years where prices are finishing below breakeven. For these projections, I use the estimate production costs from my colleagues at Iowa State University (see Ag Decision Maker for the 2018 and 2019 costs, the 2019 costs will be released later in January). The extra bushels produced over the past few years have helped reduce per-bushel production costs and bring breakeven a little closer. In fact, corn has been trying to break through. But the pattern throughout the year was the typical seasonal one, although due to some atypical reasons.

Figure 2. Soybean export shifts (Source: USDA-FAS).

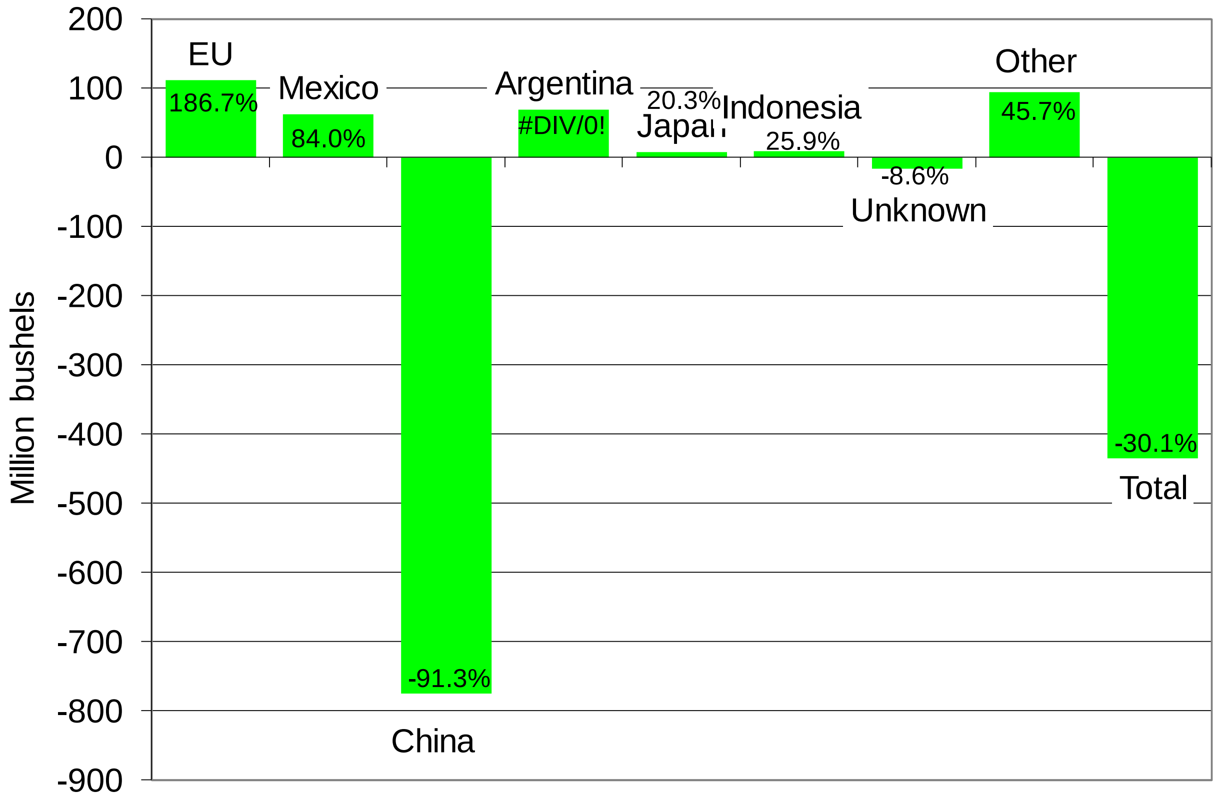
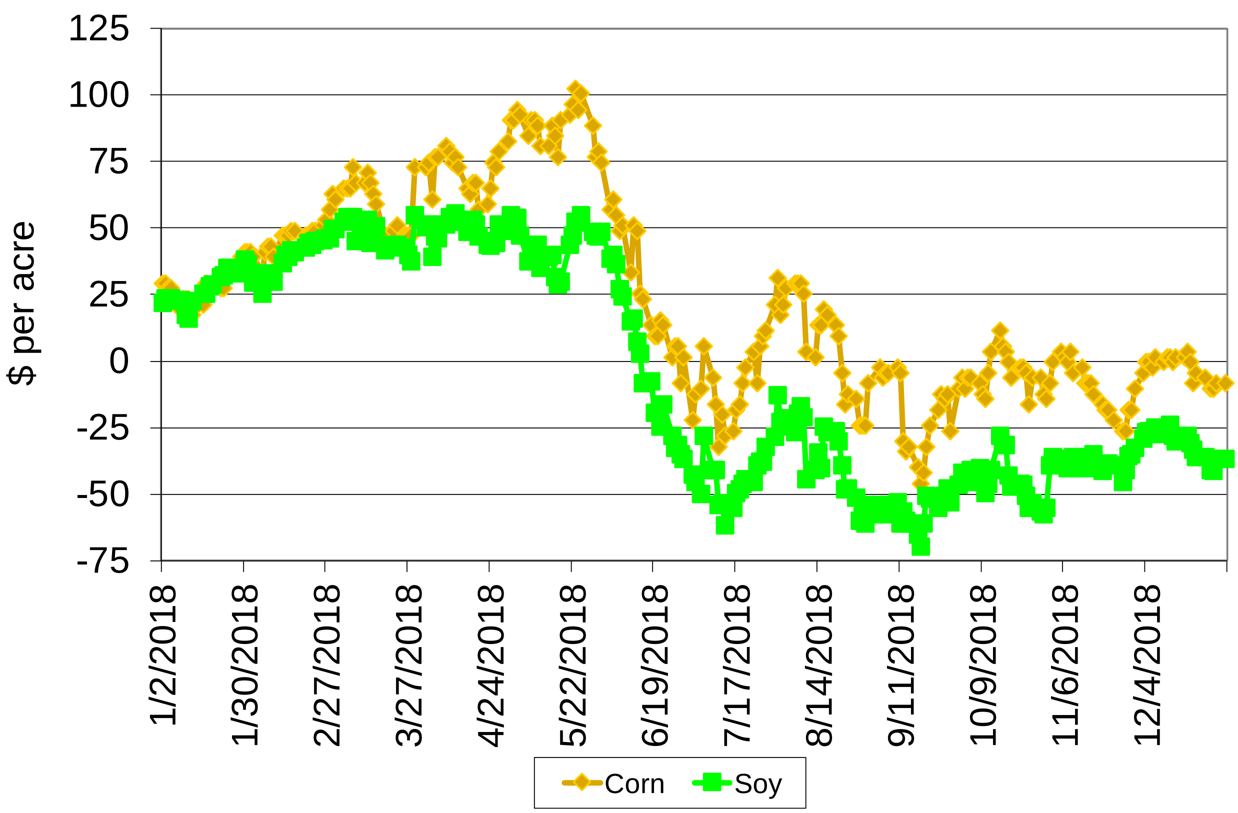
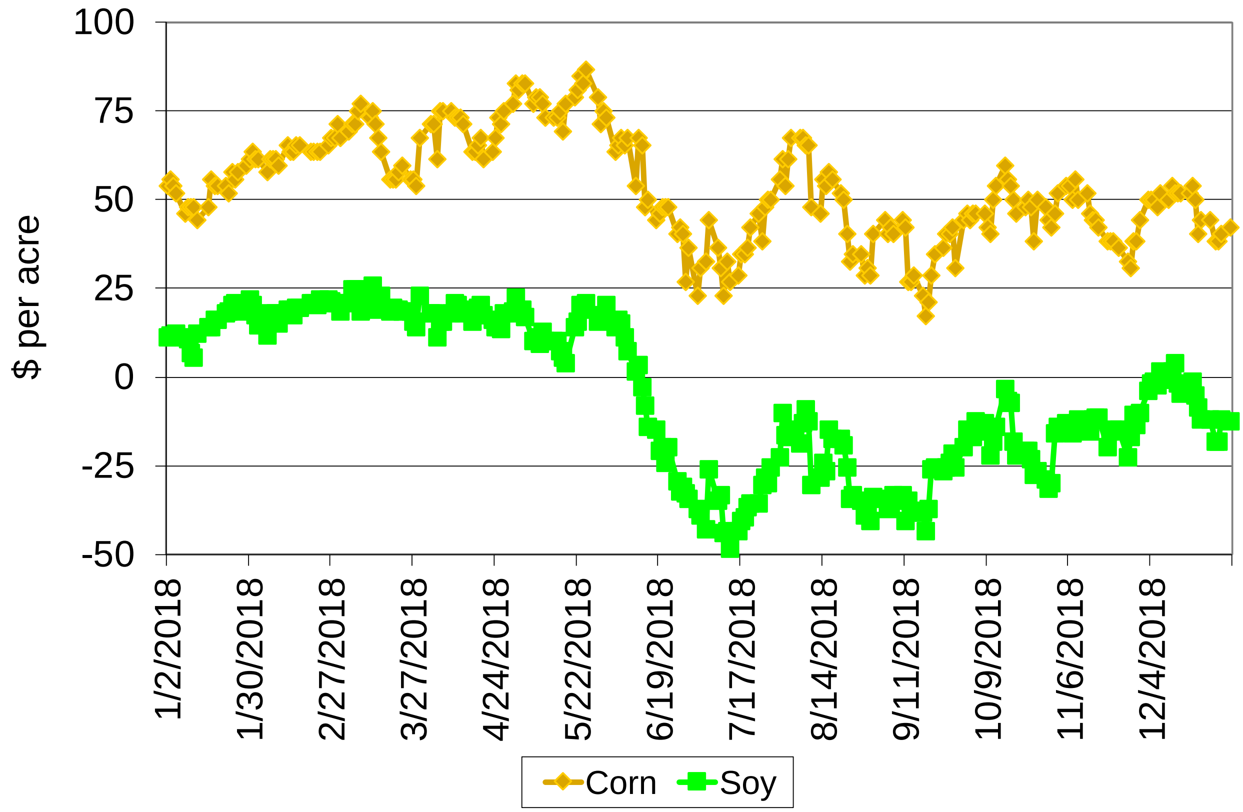


Figure 3. Projected 2018/19 crop margins.



Looking forward to the 2019 crops, the futures markets are offering what I consider to be a fairly optimistic view. Corn is penciling out above breakeven at the moment, even with higher fertilizer and chemical costs. Soybeans are holding just below breakeven. Both markets are exhibiting a good amount of carry throughout the 2019 marketing year, on top of the carry for the rest of the 2018 marketing year.

Figure 4. Projected 2019/20 crop margins.



And that market optimism, especially for corn, has me a bit concerned as we head into spring. USDA's initial guess on corn area for 2019 showed a three million acre increase. With prices as they currently stand, I would expect a larger shift than that to corn. If corn adds 4-4.5 million acres, then corn futures would likely retreat again. So while you're considering your spring and summer sales for the crops you have in the bin, I would also be looking at those forward prices on the board for the 2019 crops. For the past few years, your best pricing opportunities came right after the seeds were planted.

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