# 2018 Farm Bill
## Making the ARC/PLC Decision

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Kansas State University Agricultural Economics

Check out our WEB page at http://www.AgManager.info

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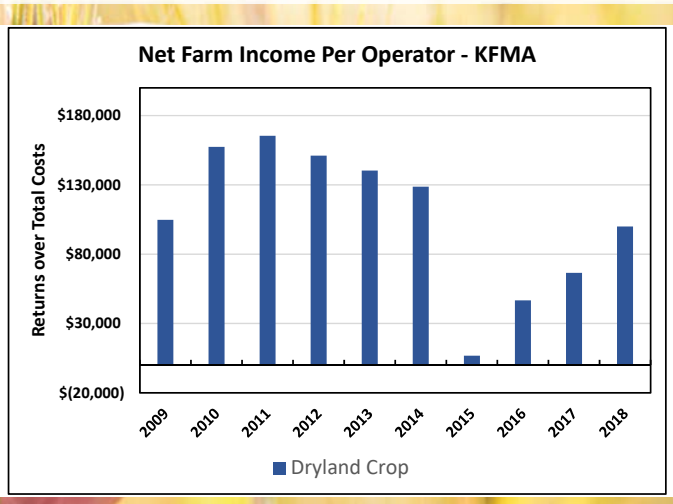
1. Analysis is based on our reading of the Managers Report and the Law. There is no "one size fits all" program and farmers will have to make financial decisions that carry risk of a financial loss or gain. This analysis carries no warranty given or implied by Kansas State University or the author.

2. Many of the results will not be known until USDA publishes the implementation regulations for the new farm programs.

# Farm Financial Situation

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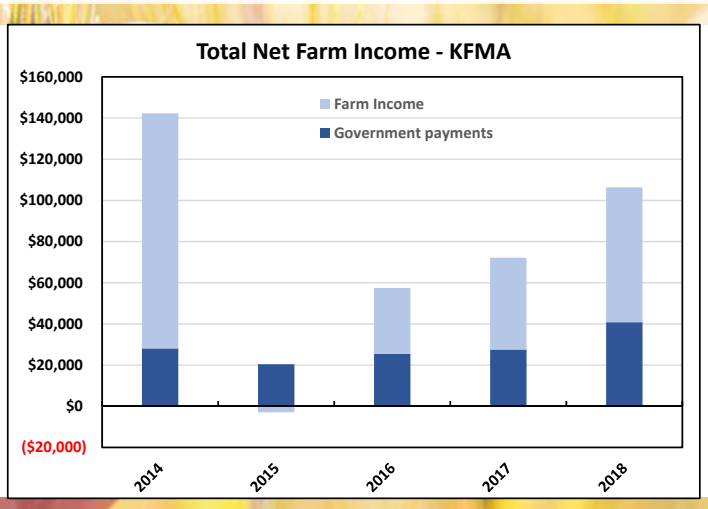
# Farm Financial Situation

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# Farm Financial Situation

- **What did our financial situation in 2014-15 mean for our Farm Bill decisions?**
- **Comments by lenders that government payments wouldn't be considered in the financial analysis used for loans**
  - Quickly changed in fall of 2015
- **PLC wasn't perceived as likely for many states and counties, so ARC was the higher enrollment program for corn, soybeans, wheat**
  - Grain sorghum was the exception with a relatively higher reference price

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## Percent of Farms that Made an ARC/PLC Election Nationally by Crop

| Commodity | PLC | ARC-CO | ARC-IC |
|---|---|---|---|
| BARLEY | 57% | 42% | 1% |
| CANOLA | 93% | 7% | 1% |
| CORN | 9% | 91% | 0% |
| DRY PEAS | 44% | 53% | 3% |
| FLAXSEED | 59% | 40% | 1% |
| GRAIN SORGHUM | 54% | 46% | 0% |
| MUSTARD | 53% | 42% | 4% |
| OATS | 23% | 76% | 0% |
| SAFFLOWER | 57% | 40% | 2% |
| SESAME | 76% | 24% | 0% |
| SOYBEANS | 4% | 96% | 0% |
| SUNFLOWERS | 49% | 50% | 1% |
| WHEAT | 34% | 66% | 0% |

Source: USDA (http://www.fsa.usda.gov/programs-and-services/arcplc_program)

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# What we did last time around…

- **Farmers with more experience picked PLC**
  - More experience with low price scenarios than newer farmers who just came off a run of very good incomes
- **Farmers with higher crop insurance coverage levels preferred ARC**
  - Did not see advantage to SCO option under PLC
- **High levels of uncertainty pushed people toward PLC**
  - Simpler program and more attractive for people who "just weren't sure" what program to pick
- **Current information on payouts of ARC in certain counties pushed people toward ARC**
  - Bird in hand attitude versus looking at the entire 5-year period

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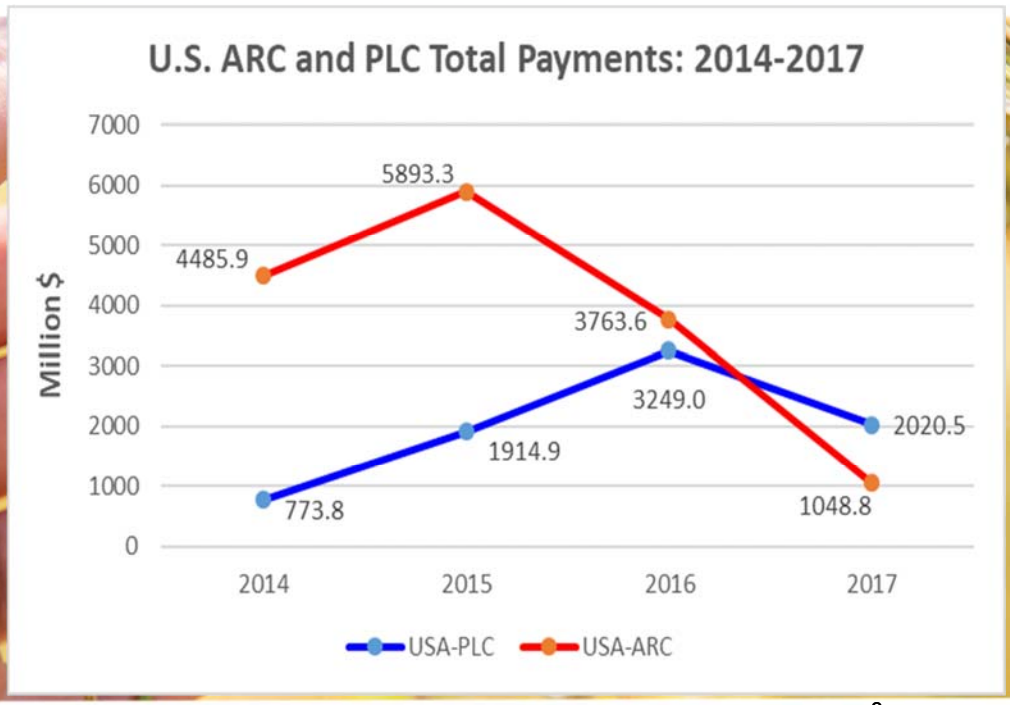


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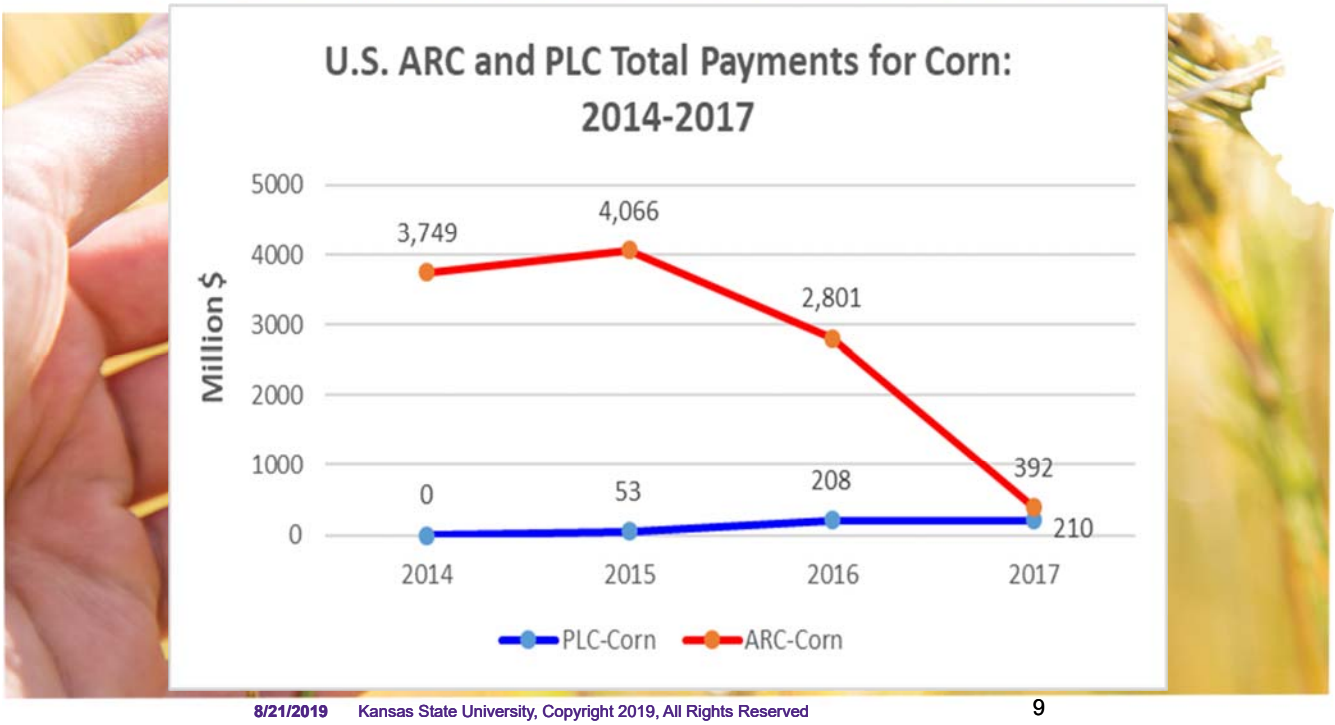


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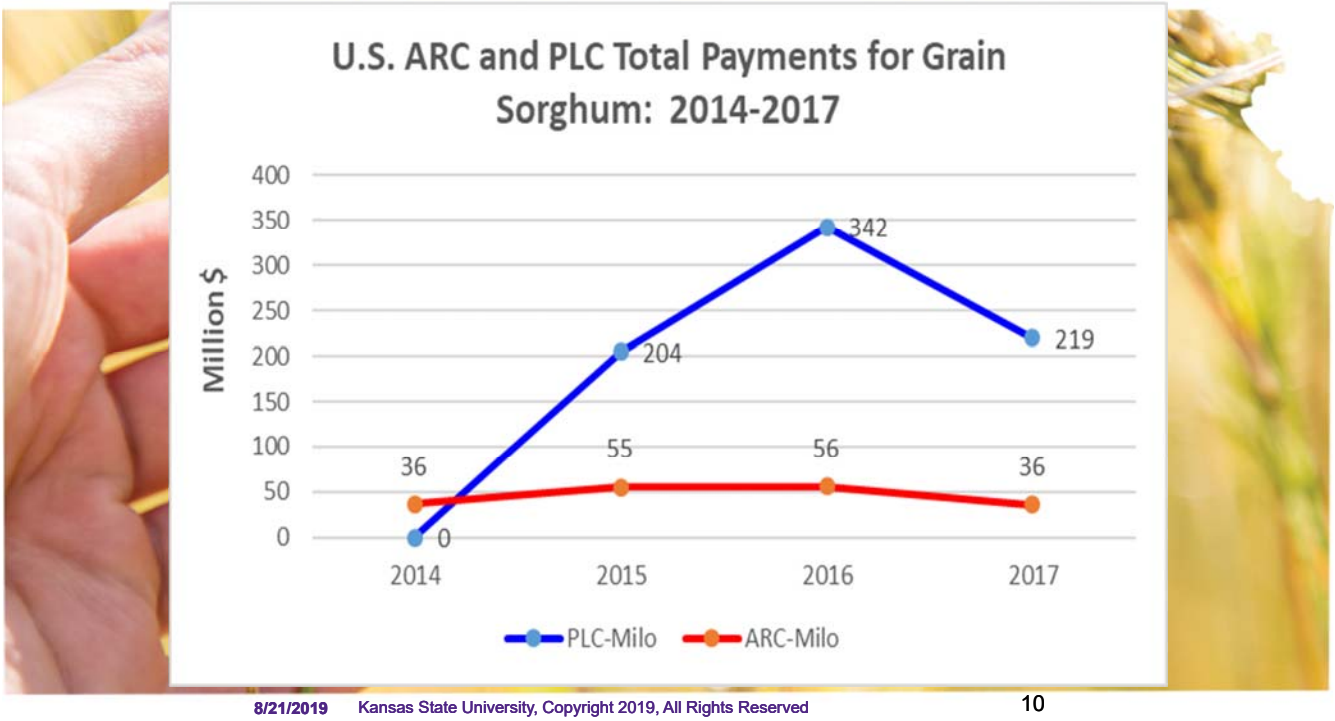


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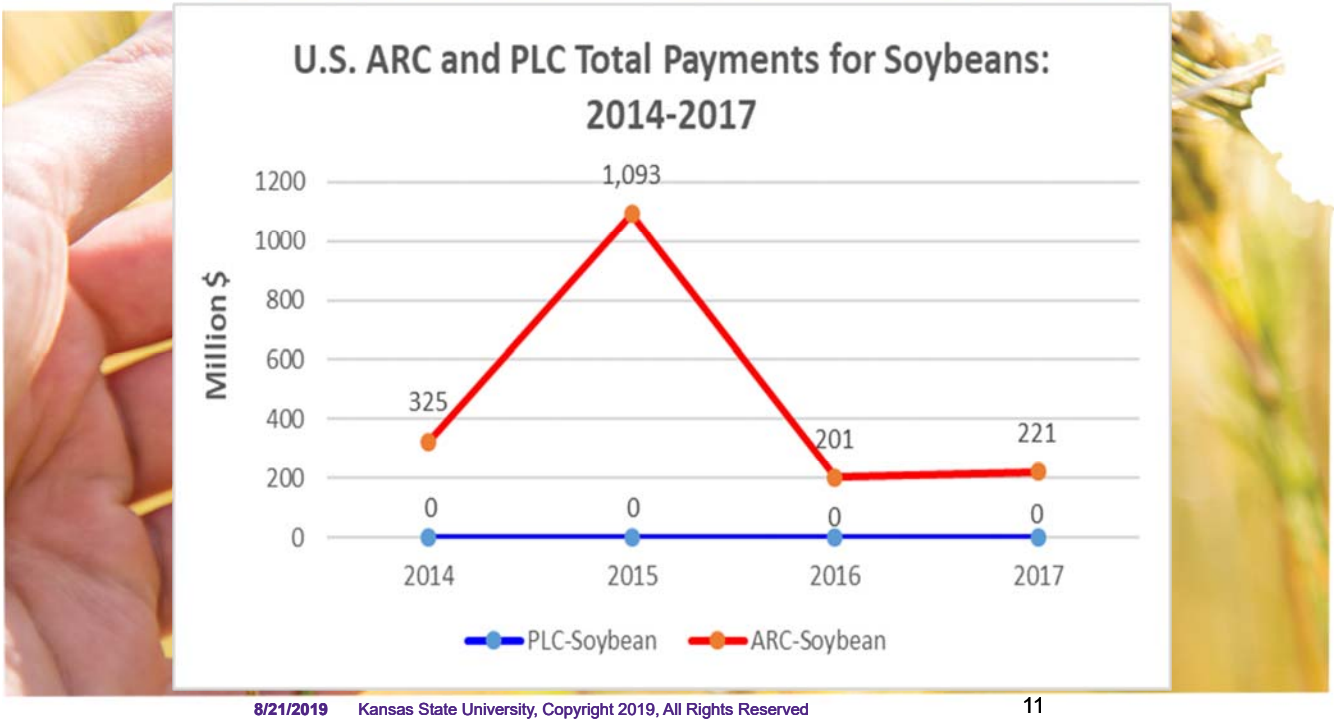


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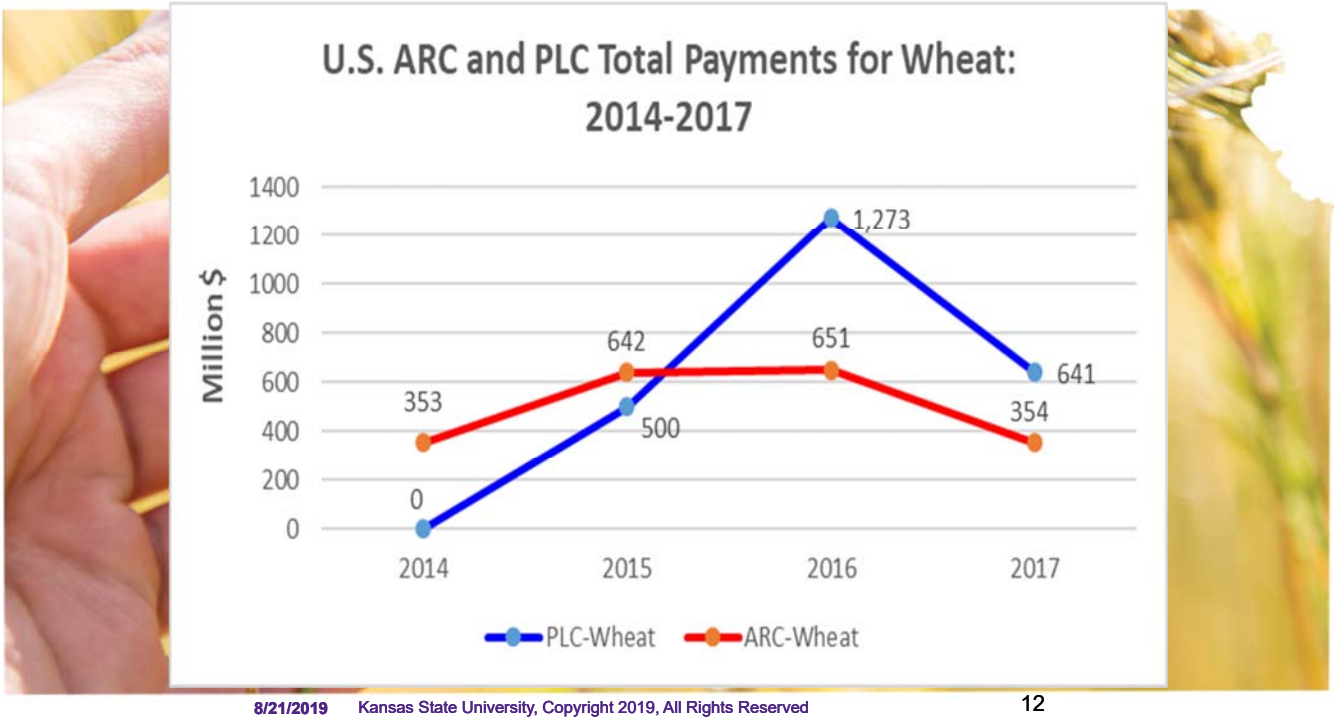


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# What do we expect this time around?

- Tendency to look backwards and try to fix our (perceived) mistakes
- But we have to keep looking forward and using the best information we have to determine which program is the best fit
- Risk management versus highest payout
  - Is your farm more susceptible to catastrophic price scenario or shallow loss?
- MFP payments will be supplementing the ARC/PLC payments and may end up being higher for some people
  - Do not depend on MFP in the long run…

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# Payment Rates for MFP2

| Commodity | Units | MFP1 Payment Rate ($/unit) | Implied MFP2 Payment Rate | Implied MFP2 Rate as % of 2018 Price |
|---|---|---|---|---|
| Corn | bushels | 0.01 | 0.23 | 6.6 |
| Cotton | pounds | 0.06 | 0.16 | 22.6 |
| Hay, Alfalfa | tons | - | 5.55 | 3.1 |
| Oats | bushels | - | 0.19 | 7.3 |
| Peanuts | pounds | - | 0.02 | 10.5 |
| Rice | pounds | - | 0.01 | 5.4 |
| Sorghum | bushels | 0.86 | 1.56 | 47.1 |
| Soybeans | bushels | 1.65 | 1.73 | 20.1 |
| Wheat | bushels | 0.14 | 0.47 | 9.2 |

Estimates generated by J. Janzen, K-State, using data from the National Agricultural Statistics Service.

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# 2018 Farm Bill Titles

- Title I: Commodities
- Title II: Conservation
- Title III: Trade
- Title IV: Nutrition
- Title V: Credit
- Title VI: Rural Development
- Title VII: Research, Education, and Related Matters
- Title VIII: Forestry
- Title IX: Energy
- Title X: Horticulture
- Title XI: Crop Insurance
- Title XII: Miscellaneous

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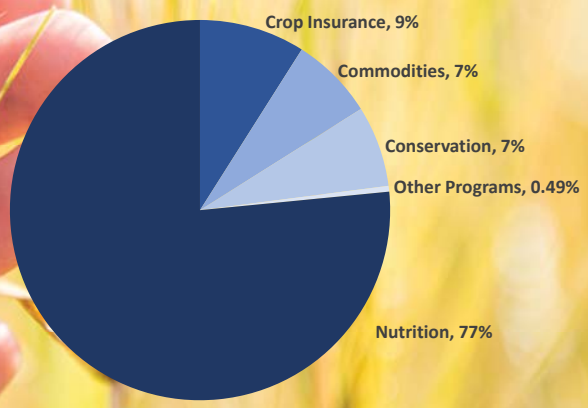
# Farm Bill Budget

## Projected Outlays, FY2019-2028




Source: Congressional Research Service and Congressional Budget Office

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# Decisions to be made…

- Under the commodity title, each farm will choose a farm program to enroll in starting Sept. 3rd, 2019
- If you do not enroll, you farm will default to the decision made for the last farm bill and NO payment will be received on the 2019 crop
- The first payment of the new Farm Bill will be make in Oct. 2020
  - This will be on the crops harvested in 2019


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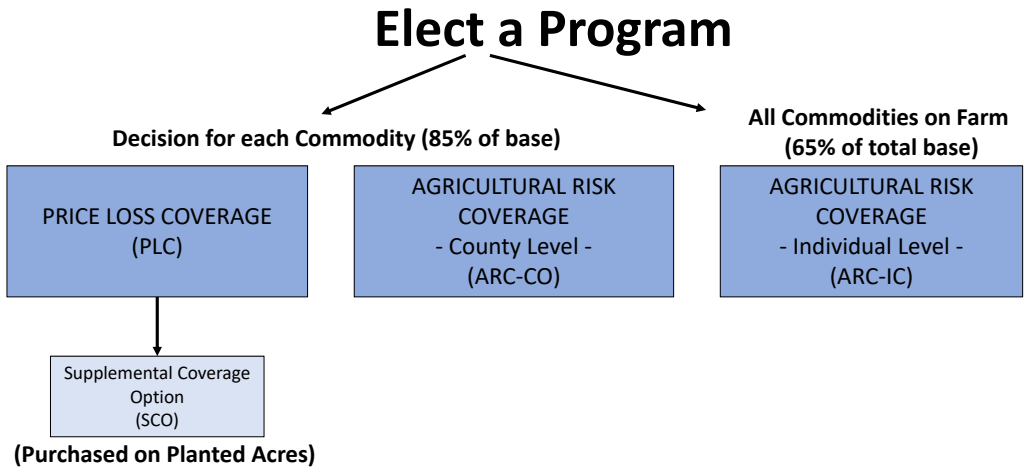
# Decisions to be made…

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# Basics of the 2018 Farm Bill

- **Commodity programs haven't changed much**
  - Still have ARC-CO, PLC and ARC-IC
  - Growers are more familiar with these programs than they were last time and this should affect their decision making process
- **PLC is a catastrophic price risk program**
  - Payments kick in when MYA price falls below a reference price
  - You are paid based on the difference between the MYA price and the reference price times your FSA program yield
- **ARC-CO is a shallow loss coverage program**
  - Pays out when the county revenue falls below a benchmark revenue

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# Basics of the 2018 Farm Bill

- **ARC-IC will remain unpopular**
  - Individual farm records and yields times a MYA price, high recordkeeping demands
  - MAY be inviting to producers that had 100% Prevented Plant on their farm
- **SCO**
  - Only available with PLC
  - Make the election of SCO each year (not locked into your decision beyond the crop year)

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# Farmers will Select either ARC or PLC

- Farmers will elect ARC or PLC per commodity for 2019 & 2020, but will be able to change elections annually beginning in 2021 (but don't have to).
- This change will allow farmers to select their preferred program based on more current market conditions.
- Reduces the pressure of making a 1 time program decision for 5 years.

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# Timeline

| | Beginning | End |
|---|---|---|
| 2019 Enrollment (Elect programs for 2019 & 2020) | September 3rd,2019 | **March 15th,2020** |
| 2020 Enrollment | October 1st, 2019 | June 30th, 2020 |
| 2020 Yield Update | October 1st, 2019 | September 30th, 2020 |
| | | |
| 2019 ARC/PLC Payments Received | October 2020 | |

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# PLC review

- **Catastrophic price decline protection**
  - Payments occur then prices fall below reference prices
  - Payments made on base acres and program yields

**Example:**

**Farm X has 100 base acres of corn and 120 bushel program yield**
**Reference price is $3.70**
**The MYA Corn price is $3.50**

Corn payment per acre = ($3.70 - $3.50) X 120 = $24.00 per acre

Total corn payment= $24.00 X 100 base acres X 85% = $2,040.00

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# What Changed in PLC?

1. "Effective Reference Price" instead of just the statutory reference prices

| Commodity | 2018 Farm Bill Statutory Price ($/bu) | Highest "Effective" Reference Price Possible (115% of Statute) |
|---|---|---|
| Wheat | 5.50 | 6.33 |
| Corn | 3.70 | 4.26 |
| Sorghum | 3.95 | 4.54 |
| Soybeans | 8.40 | 9.66 |

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# What Changed in PLC?

**2. Payment Yield Update will again be offered by 2020**

- The 2020 update is intended to benefit farmers who sustained multiple years of losses during the 2008-2012 crop years used to calculate the 2014 updated program yield.
- Will use the farm's yields from 2013-2017, excluding any years that the crop was not planted
- Low yield years will be replaced by 75% of the county average yield from 2013-2017
- The average farm yield over these years (after low yield replacement) will be multiplied by 90% and then by a "detrending" factor

****Don't get caught up in the formula. FSA will run this for you. If the update is higher than your current yield, then update, even if not in PLC**

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# ARC review-2014 Farm Bill

- **Revenue protection program**
  - Payments are made if per acre revenue falls below 86% of benchmark
- **ARC-County benchmark**
  - 5-yr Olympic avg. national MYA price X 5-yr Olympic avg. county yield
- **ARC-Individual benchmark**
  - 5-yr Olympic avg. of the weighted per-acre revenues
- **Payments max out at 10% of benchmark revenue**

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# ARC-County Example-2014 Farm Bill

- **Setting the REVENUE guarantee**

| Marketing Year Average Price | |
|---|---|
| 2009/2010 | ~~$3.70~~ |
| 2010/2011 | $5.18 |
| 2011/2012 | $6.22 |
| 2012/2013 | ~~$6.89~~ |
| 2013/2014 | $4.46 |
| *Olympic Average* | *$5.29* |

| County Yield | |
|---|---|
| 2009 | 100 |
| 2010 | ~~120~~ |
| 2011 | 80 |
| 2012 | ~~70~~ |
| 2013 | 110 |
| *Olympic Average* | *96.7* |

ARC Benchmark: $5.29 X 96.7 = $511.54 per acre

ARC Guarantee: $511.54 X 86% = $439.92 per acre

ARC Maximum payment: $511.54 X 10% = $51.15

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# ARC-County Example

- **ARC Guarantee: $439.92, ARC Maximum payment: $51.15**
- **Current Year: $3.50 MYA corn price, 110 bushel county yield**
  **Current year revenue= $3.50 x 110 = $385.00**
- **Revenue Loss = $439.92 - $385.00 = $54.92**
- **Payment= $51.15 X 100 corn base X 85% = $4,347.75**

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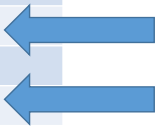
# Changes made to ARC County

- Increase the transitional yield plug to 80% from 70% used for the Olympic average yield calculation for ARC.

| County Yield | |
|---|---|
| 2015 | 100 |
| 2016 | 120 |
| 2017 | 80 |
| 2018 | 30 |
| 2019 | 110 |
| *Olympic Average* | *96.7* |



What this means:
Low years in yield history will be replaced by a higher number

This will bring the average up in some cases, raising the ARC-CO guaranteed revenue

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# Changes made to ARC County

- **The policy intends for FSA to implement a trend yield adjustment, similar to crop insurance's SCO trend adjustment, to be applied to ARC.**
- **FSA will use the "effective reference price" to replace low prices in the ARC guarantee.**
- **Make ARC payments based on county where base acres are located rather than administrative county.**
- **Provide a separate irrigated and non-irrigated yield ARC guarantee in most counties with sufficient acres of each practice.**
- **Prioritize RMA data in the calculation of county yields used for the ARC guarantee and actual yields.**
- **The 5 year guarantee will have a "lag" year**
  **Ex.: 2019 Guarantee will include years 2013-2017, 2020 Guarantee-2014-2018**

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# Payment Limits-Both Programs

- The individual payment limit remains the same at $125,000.
- Spouse will also continue to receive a payment limit
- Extends the definition of family to nieces, nephews, and first-cousins.
- This is really no change from the current number of payment entities.
- The Adjusted Gross Income cap remains at $900,000.
- The Marketing Assistance Loans (MAL) and Loan Deficiency Payments (LDP) payments are no longer counted towards the $125,000 payment limit for ARC and PLC programs.

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# No Loss of Base Acres?

- Farmers-ranchers who planted their entire farm to grass and pasture all years from 2009-2017 will have their base "unassigned".
- Question: What is NOT grass and pasture?
  - All program crops.
  - Alfalfa
  - Farmers who planted base acres to wheat or oats and harvested it as hay or pasture are considered planted to a program crop.
  - CRP is considered planted and not grass/pasture
  - Farmers who planted triticale, brome, or similar forages for hay or grazing are in a "gray" area. What is the definition of "grass"? It will need to be interpreted by the Secretary.
  - Base acres converted to grass hay or native grass pasture are NOT considered planted to a crop.

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# No Loss of Base Acres?

- Farmers (ranchers) who have their base "unassigned" will continue have their acres considered "planted" to program crops during the life of this farm bill so it will maintain the base for future legislation.
- These base acres will be "unassigned" from receiving commodity payments, but eligible for the Conservation Stewardship Program (CSP) grasslands program payment at a rate of $18/acre.
- They will need to sign up for this NRCS program (not automatic) and address at least one resource concern

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# Crop Insurance Title

- At the request of virtually every farmer, rancher, rural business owner, and lender in the country, policy makers protected crop insurance.
- Enterprise units are now allowed across county lines.
- While discussed, no income limits or payment limits were applied to crop insurance.
- Retained the Harvest Price Option (HPO) that provides yield replacement coverage, that allows farmers to maintain their hedge.
- May increase the use of cover crops in some areas due to how cover crops are counted.
- Requires RMA to consider expanding availability of limited irrigation crop insurance but doesn't require it. This likely means RMA will continue expanding, but only after they are satisfied the limited irrigation data is scientifically sound.

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## Credit Title

- Increased the direct loan limit (loans directly from FSA) for farm ownership loans from $300,000 to $600,000.
- Guaranteed ownership loan increased from $1,399,000 to $1,750,000.
- Direct operating loan limit increased from $300,000 to $400,000
- Guaranteed operating loan limit increased from $1,399,000 to $1,750,000.

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## Conservation Title

- The CRP acre cap will be increased over time from 24 million acres currently to 27 million acres by 2023.
- CRP rental rates will be reduced to 85% of the average county rental rate for general sign-ups and 90% of the county average for continuous CRP enrollment.
- Conservation Stewardship Program (CSP) will be phased out as a standalone acre-based program and be administered with the current Environmental Quality Incentives Program (EQIP).

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# Industrial Hemp

https://www.northwest.k-state.edu/agronomy/industrial_hemp_resources.html

## GENERAL FAQS

Expand all

- **How does passage of the 2018 Farm Bill impact industrial hemp in Kansas?**

  Although the 2018 Farm Bill allows for the creation of federal and state plans for the commercial production of industrial hemp, new legal authority and regulations will need to be adopted before Kansas can create a commercial program. The currently proposed regulations governing the industrial hemp research program are still the only way that industrial hemp may be produced in Kansas. Therefore, at this time, the proposed regulations cannot be modified to allow the immediate creation of a program for the commercial production of industrial hemp as a result of the passage of the 2018 Farm Bill.

- **When will industrial hemp be legal in Kansas?**

  When SB 263 was published in the Kansas Register, industrial hemp was no longer categorized as a controlled substance in Kansas. However, the cultivation, growth, research, transportation, processing or distribution of industrial hemp or industrial hemp seed will only be allowed with a license as part of the research program. The regulations to acquire a license and otherwise carry out the provisions of the alternative crop research act will be complete in early 2019.


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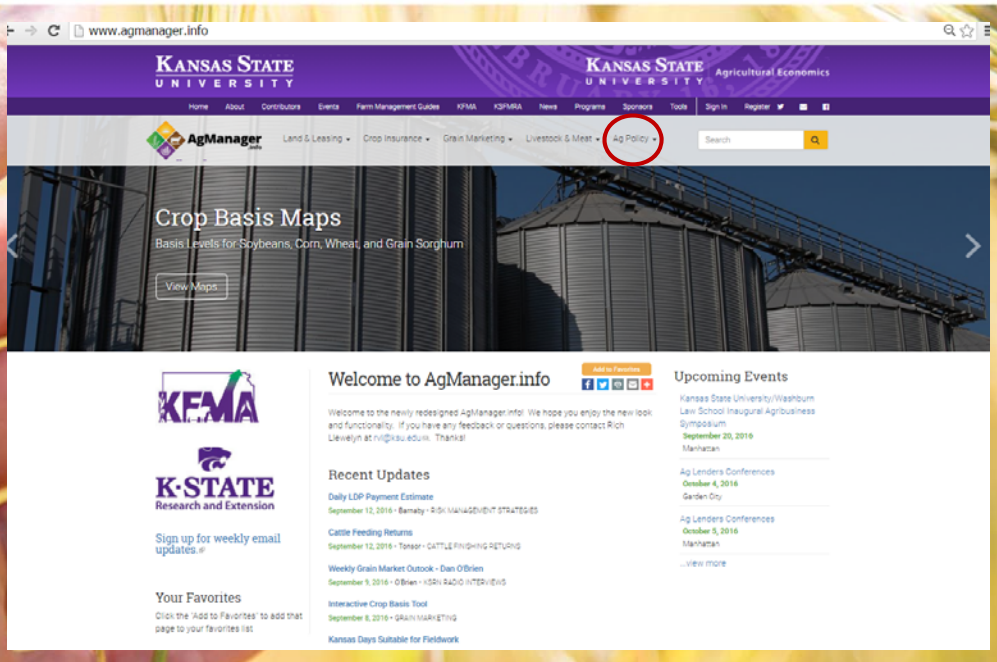


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# How Did Your County Perform in the 2014 Farm Bill?

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## Brief Review of ARC-CO and PLC Design

- **ARC-CO – Low revenue program**
  - Revenue below 86% of county benchmark: the 5-year Olympic average price of U.S. MYA multiplied by 5 year Olympic average county yield.
  - Payments determined on county-by-county basis, subject to a 10% payment cap.
- **PLC – Low price program**
  - Price below the statutory reference price for the crop.
  - Payments determined by a national price, and paid on farm base acres and program yields.
  - Subject to a higher cap, based on the difference between the reference price and loan rate.
  - Also provided the option for SCO.
- **Both programs make payment on 85% of contract base acres.**

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# What We Knew in March, 2015

- **High probability of ARC-CO payment for wheat in most Kansas counties for 2014-15 marketing year.**
  - By the time of the decision deadline, NASS yields were known, and the marketing year was over 80% complete.
- **Low probability of PLC payment for most crops in 2014.**
  - Relatively low reference prices, though higher than the 2008 target prices. Low expectation that prices would fall below the reference prices.

| Commodity | 2008 Farm Bill Target Price ($/bu) | 2014 Farm Bill Reference Price ($/bu) | 5-Year Average MYA Price (2009-2013) | 2014-2015 MYA Price |
|---|---|---|---|---|
| Wheat | 4.17 | 5.50 | $6.49 | $5.99 |
| Corn | 2.63 | 3.70 | $5.26 | $3.70 |
| Sorghum | 2.63 | 3.95 | $4.97 | $4.03 |
| Soybeans | 6.00 | 8.40 | $12.16 | $10.10 |

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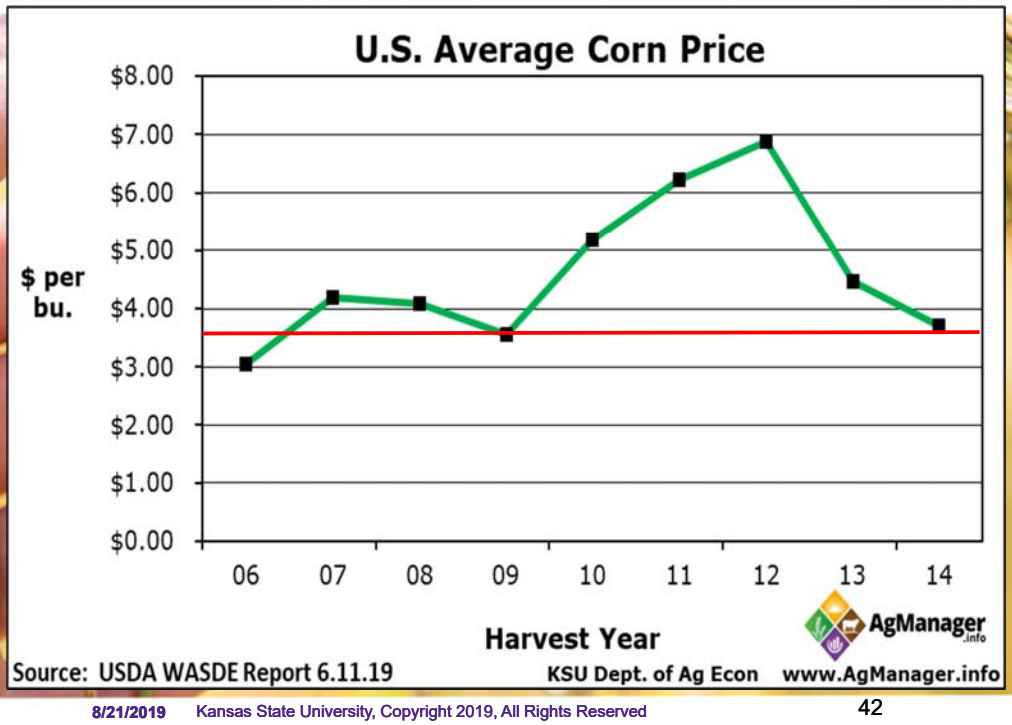


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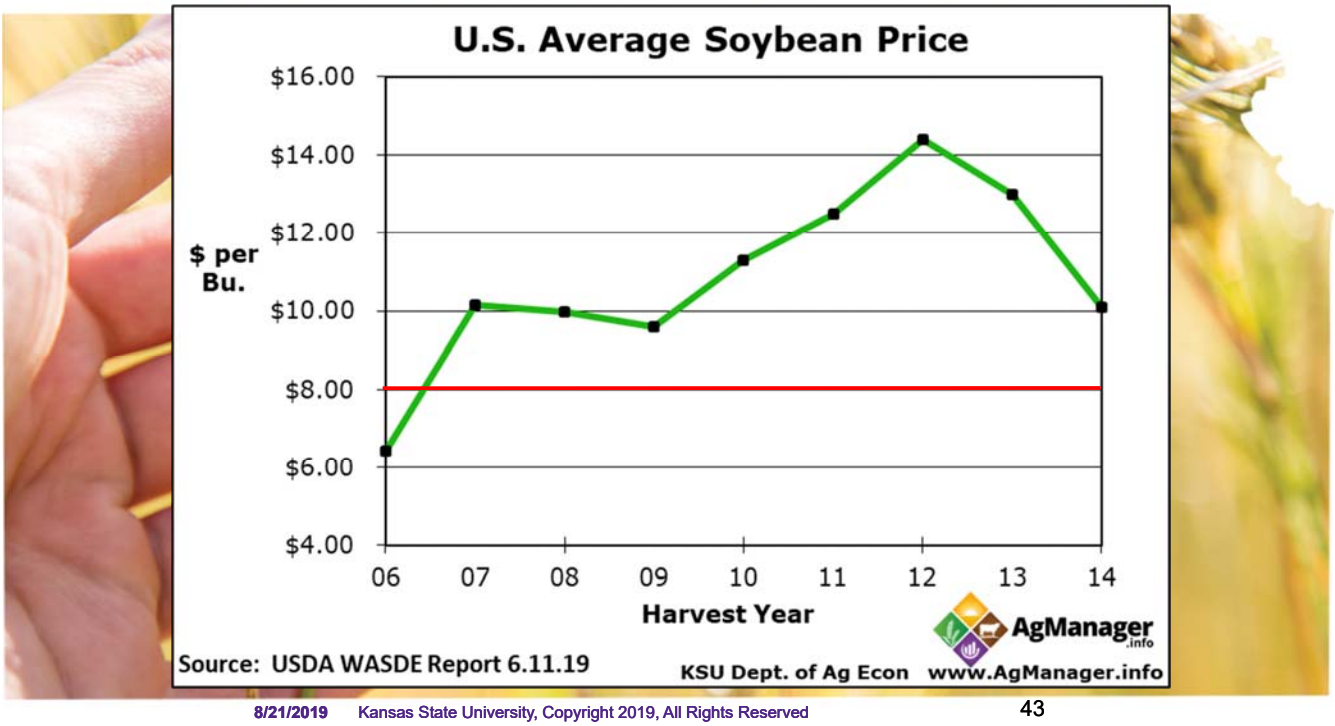


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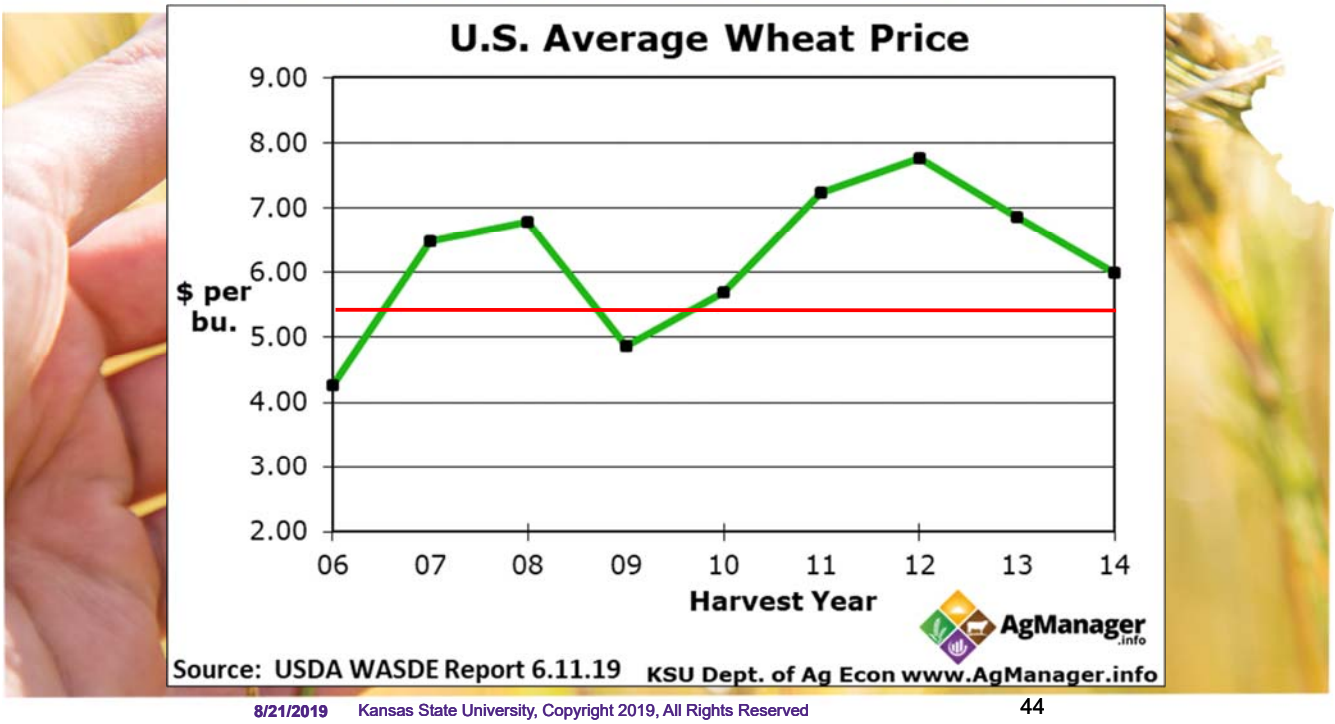


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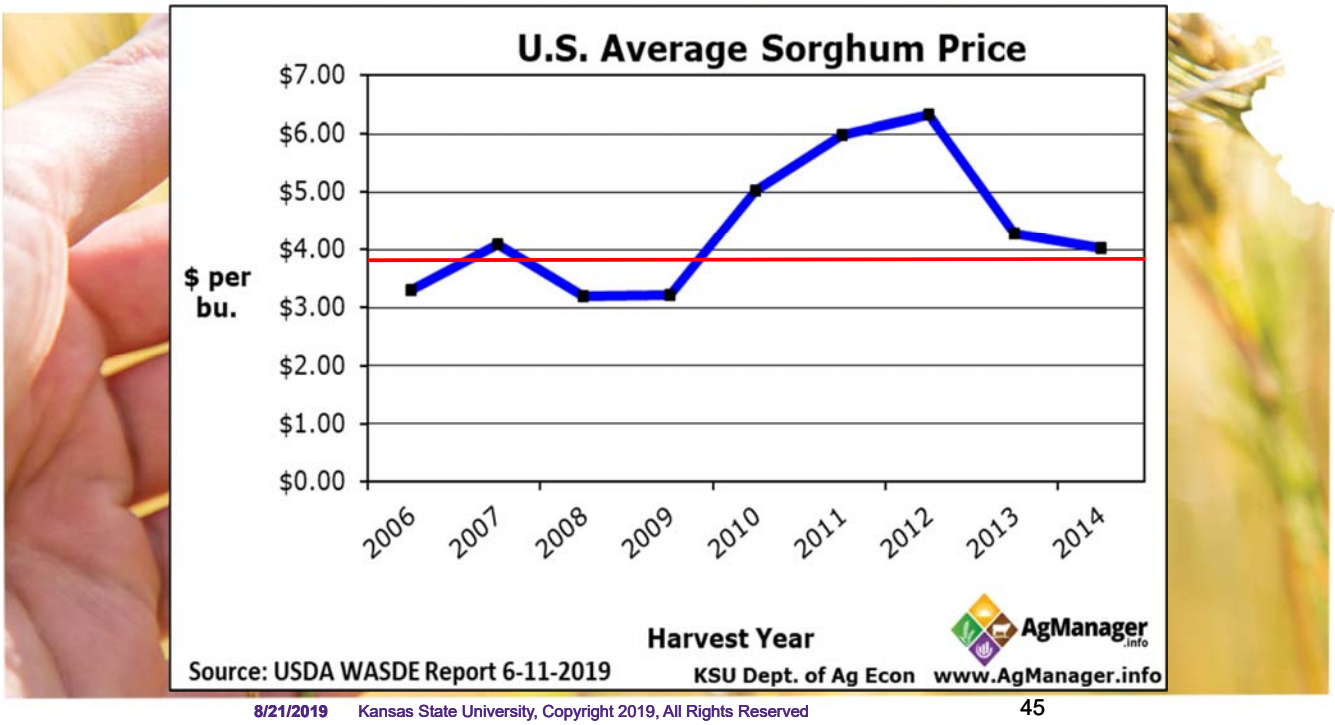


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## What We Didn't Know in March, 2015

- **Commodity prices for all major commodities were headed down and would stay down for the rest of the 2014 Farm Bill time period.**
  - This increased the usefulness of PLC.
- **Yields would be relatively high for most crops during the duration of the 2014 Farm Bill.**
  - This reduced the usefulness of ARC.
- **Trade policies would exacerbate some of the already large crop surpluses, leading to lower commodity prices.**
  - Mitigation programs would help this some (MFP).

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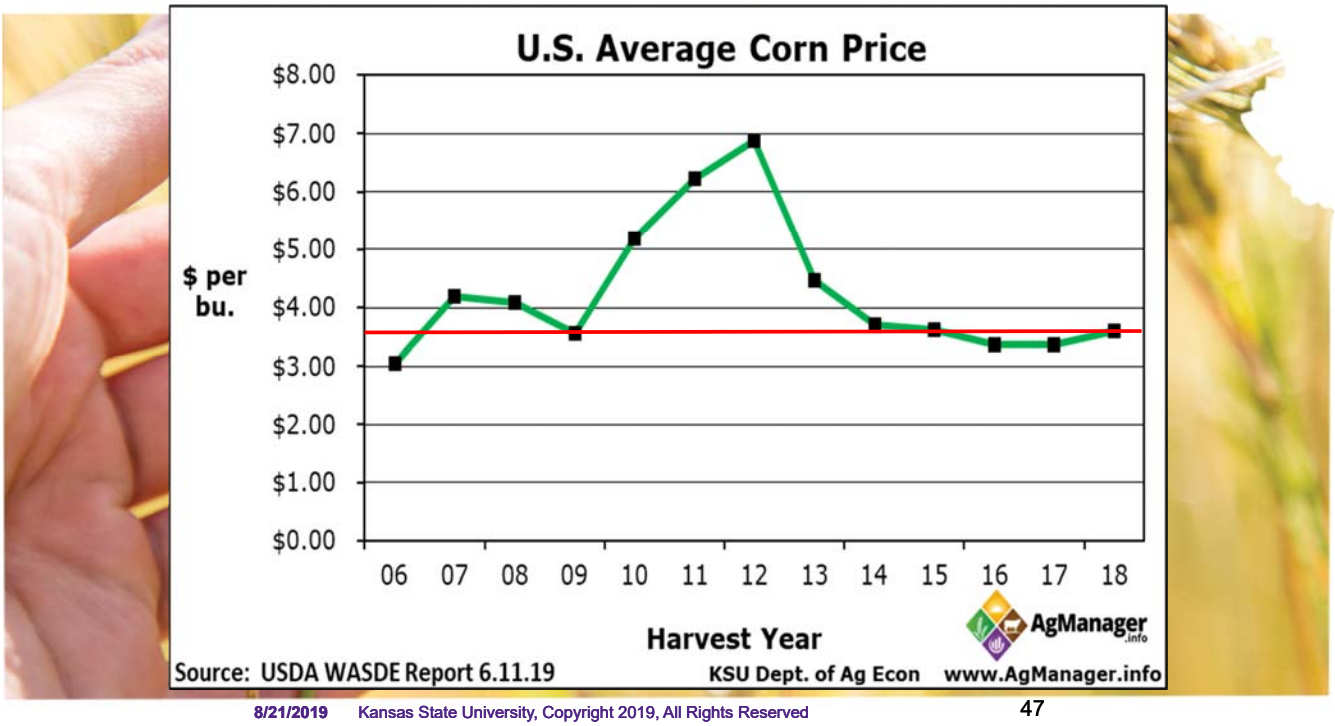


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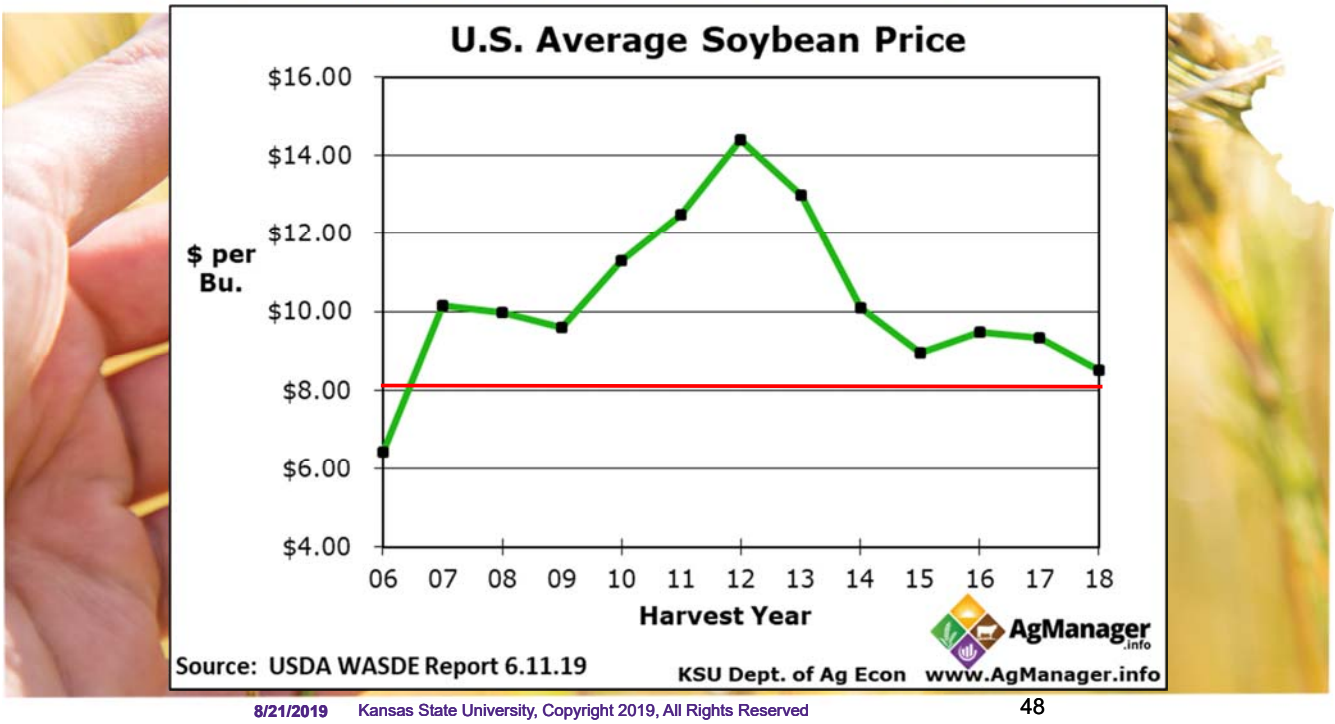


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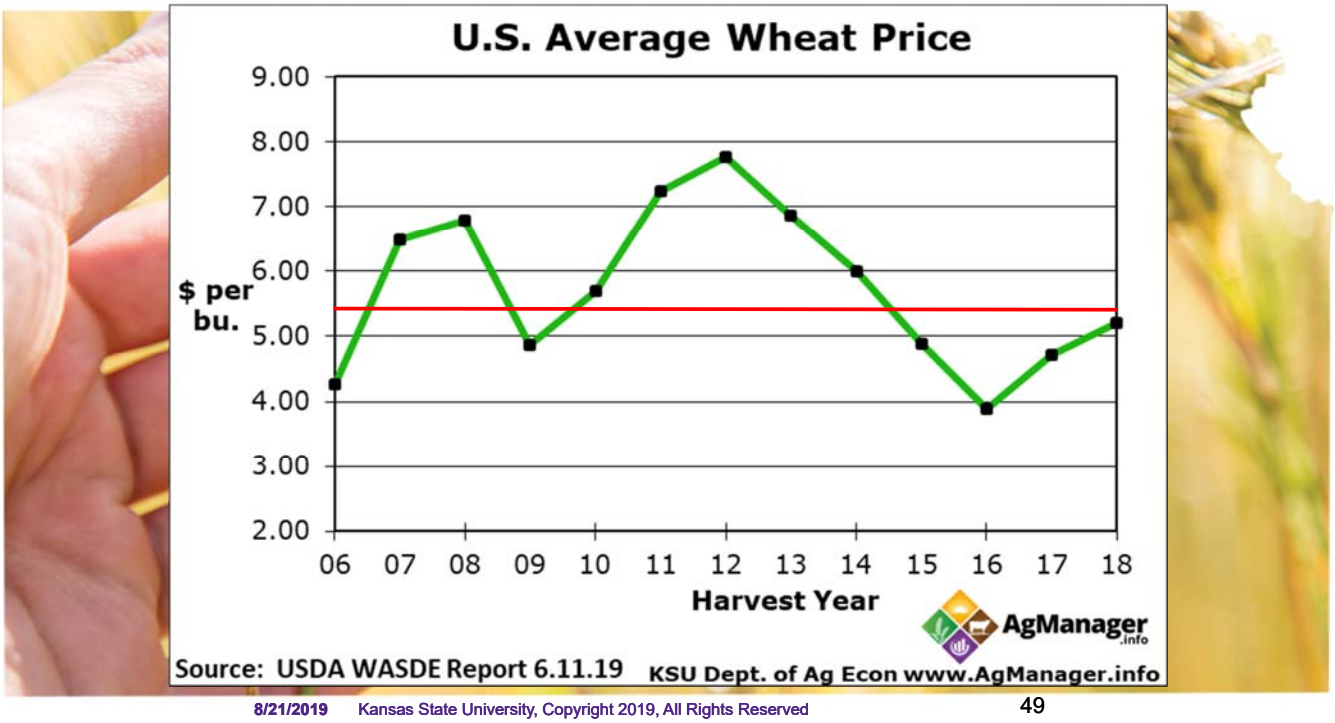


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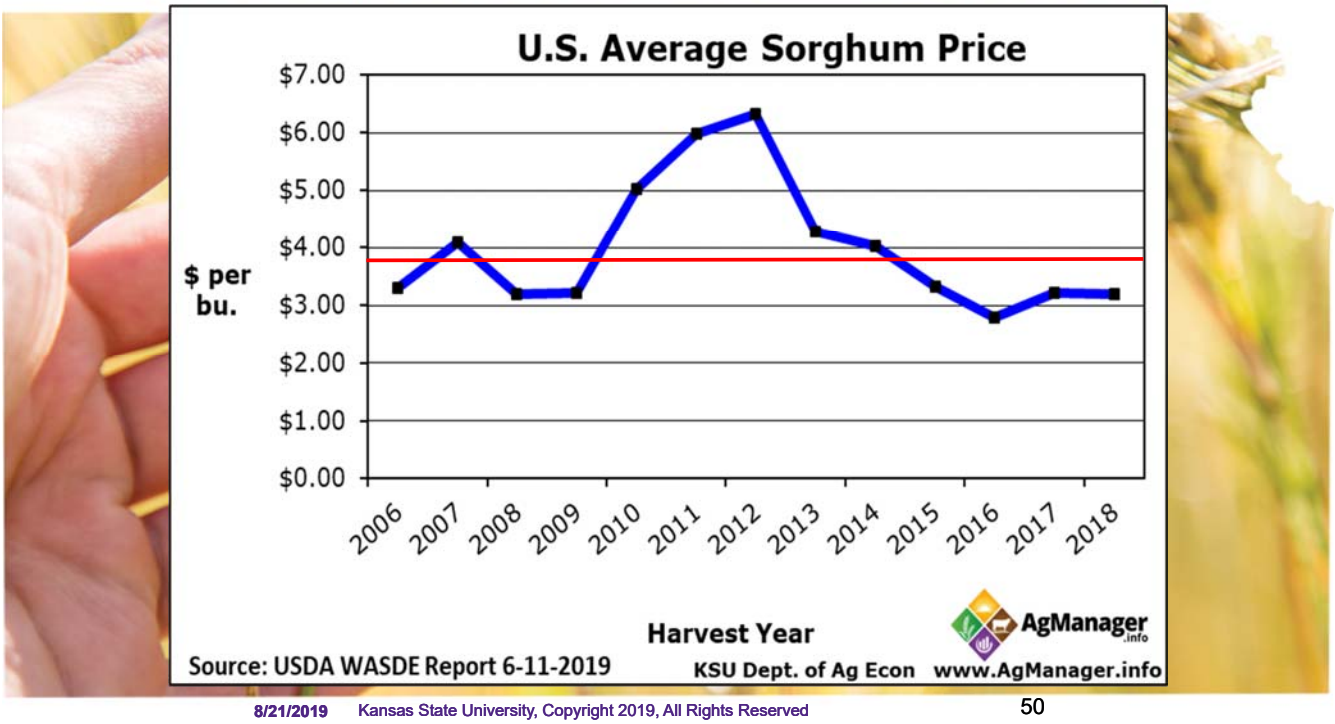


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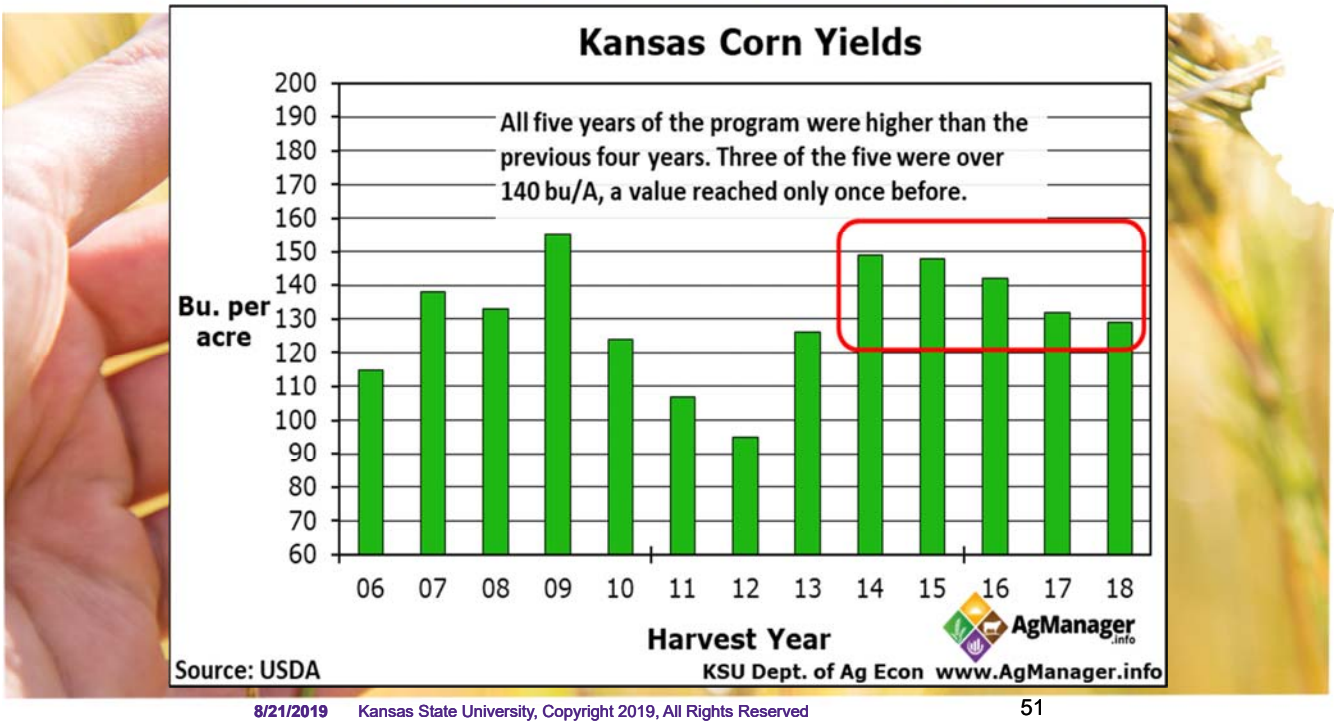


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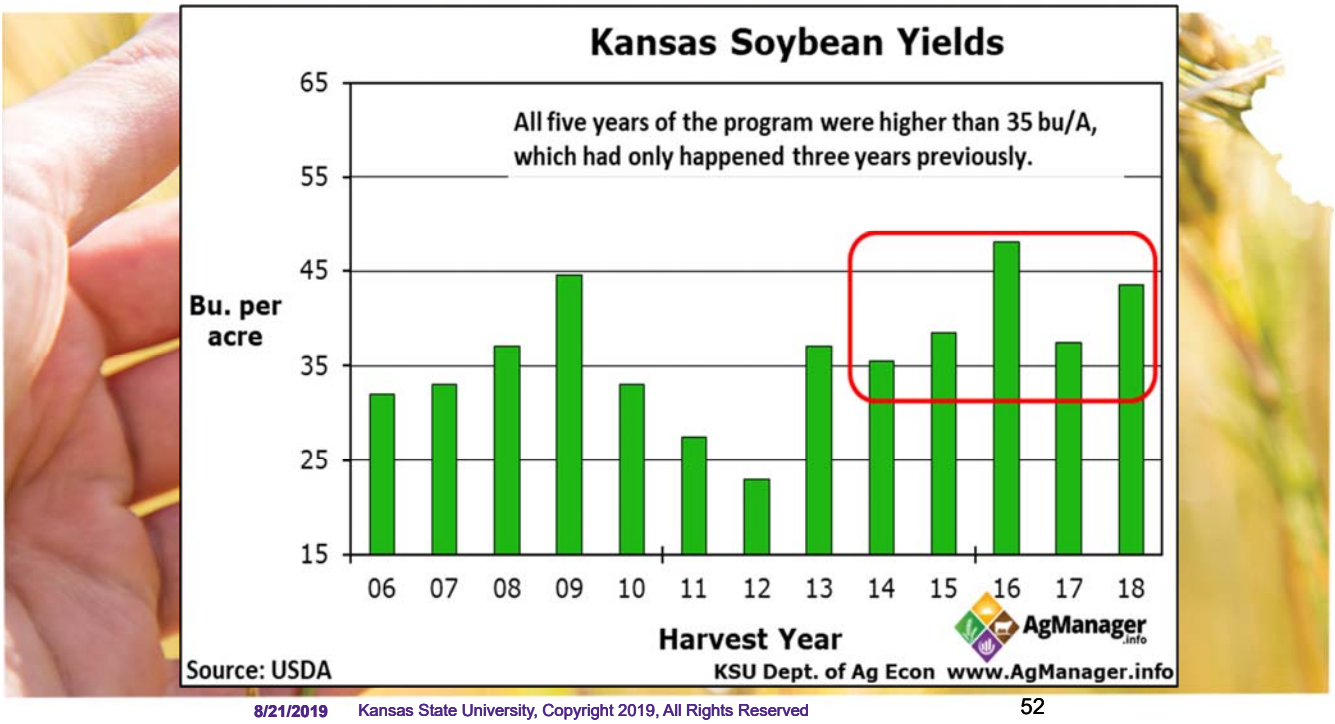


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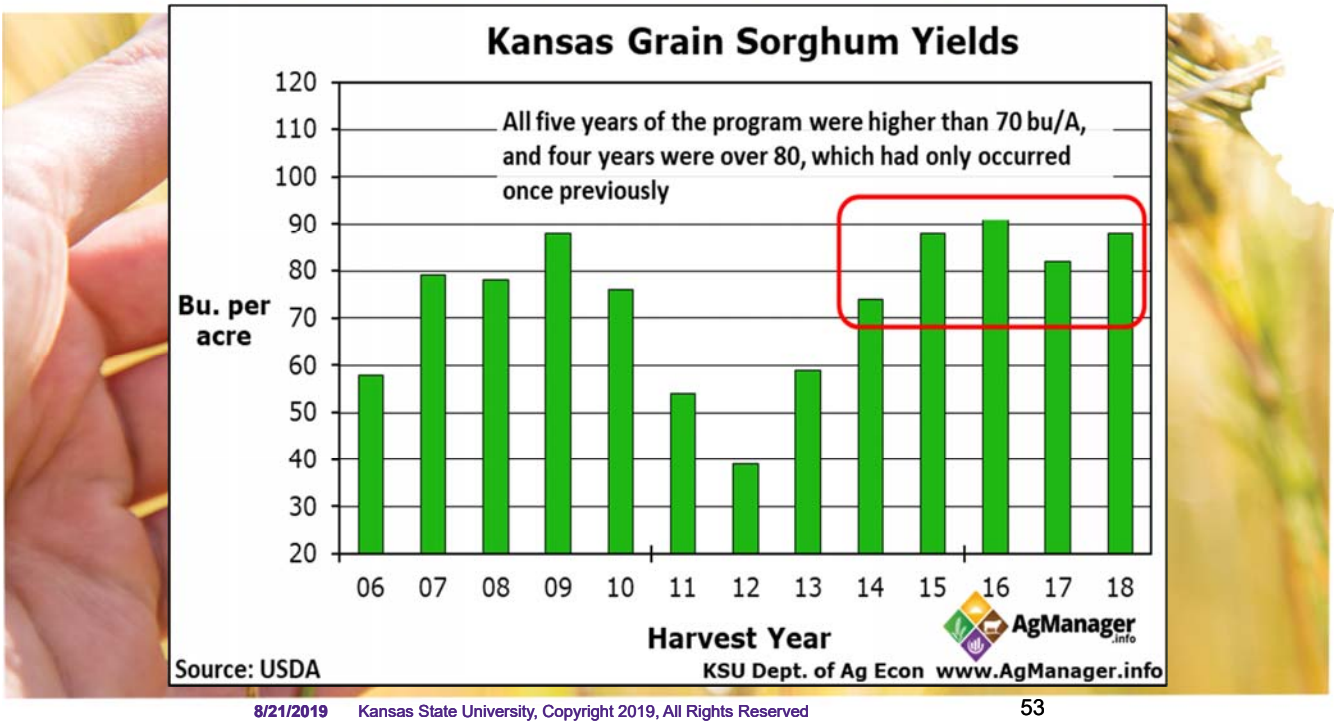


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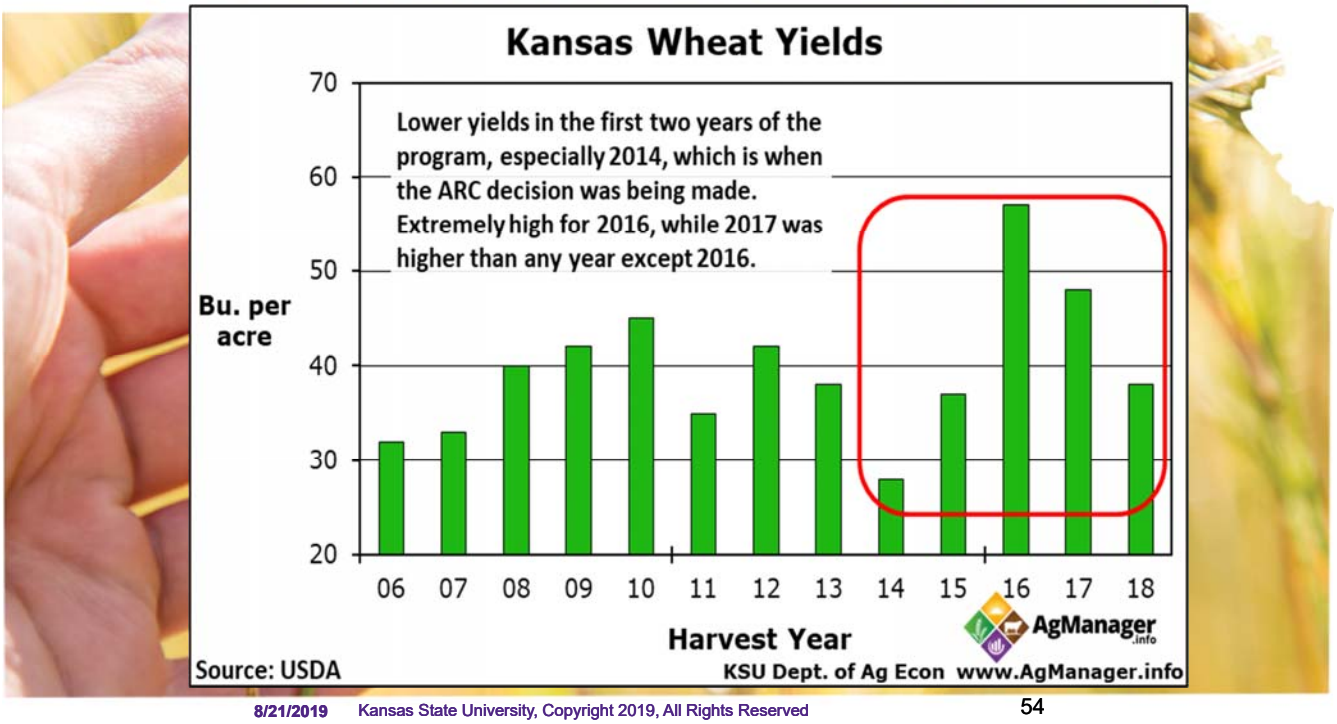


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# ARC vs. PLC: How Did Your County Do?

- **Compare ARC versus PLC using spreadsheet tool created by Robin Reid.**
  - Compares ARC-CO vs. PLC for each year, 2014-2018 and provides total payments for both, by county.
  - Underlying prices, yields, revenue and payments from USDA FSA.
- **Select:**
  - State
  - County
  - Commodity
  - Irrigation designation (All; Non-Irrigated; or Irrigated)
  - PLC Program Yield (defaults to 90% of 2014 benchmark yield for the county)

| | |
|---|---|
| State: | Kansas |
| County: | Riley |
| Commodity: | Wheat |
| Irrigation Designation: | All |
| PLC Program Yield: | 40.5 |

- **Spreadsheet at:**
  - http://www.agmanager.info/historical-arcplc-payments-county
- **A few examples…**

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## ARC-CO vs. PLC Payment Calculator 2014-2018 Corn

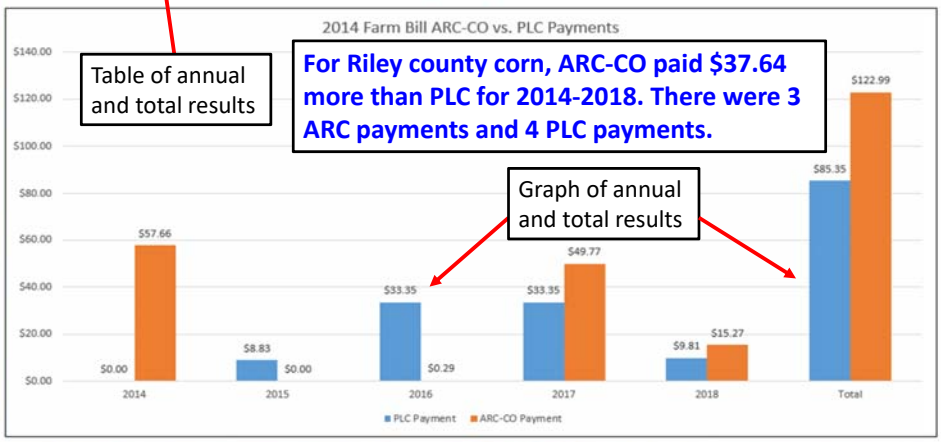
**Riley County**

| Production Year | PLC Payment | ARC-CO Payment | Reference Price | Olympic Average Price | Actual Marketing Year Price | Olympic Average Yield | Actual County Yield | Benchmark Revenue | Actual Revenue |
|---|---|---|---|---|---|---|---|---|---|
| 2014 | $0.00 | $57.66 | $3.70 | $5.29 | $3.70 | 109 | 117 | $576.61 | $432.90 |
| 2015 | $8.83 | $0.00 | $3.70 | $5.29 | $3.61 | 107 | 160 | $566.03 | $577.60 |
| 2016 | $33.35 | $0.29 | $3.70 | $4.79 | $3.36 | 111 | 136 | $531.69 | $456.96 |
| 2017 | $33.35 | $49.77 | $3.70 | $3.95 | $3.36 | 126 | 107 | $497.70 | $359.52 |
| 2018 | $9.81 | $15.27 | $3.70 | $3.70 | $3.60 | 126 | 107 | $466.20 | $385.66 |
| Total | $85.35 | $122.99 | | | | | | | |

*2018 MYA price, County Yield, and Actual Revenue are ESTIMATES based on the availabe data

Table of annual and total results

**For Riley county corn, ARC-CO paid $37.64 more than PLC for 2014-2018. There were 3 ARC payments and 4 PLC payments.**




Graph of annual and total results

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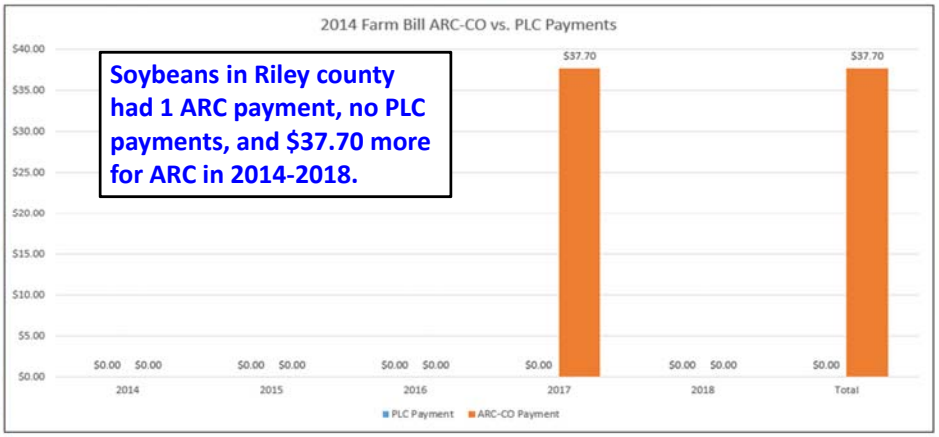
## ARC-CO vs. PLC Payment Calculator 2014-2018 Soybeans

### Riley County

| Production Year | PLC Payment | ARC-CO Payment | Reference Price | Olympic Average Price | Actual Marketing Year Price | Olympic Average Yield | Actual County Yield | Benchmark Revenue | Actual Revenue |
|---|---|---|---|---|---|---|---|---|---|
| 2014 | $0.00 | $0.00 | $8.40 | $12.27 | $10.10 | 36 | 38 | $441.72 | $383.80 |
| 2015 | $0.00 | $0.00 | $8.40 | $12.27 | $8.95 | 36 | 43 | $441.72 | $384.85 |
| 2016 | $0.00 | $0.00 | $8.40 | $11.87 | $9.47 | 38 | 50 | $451.06 | $473.50 |
| 2017 | $0.00 | $37.70 | $8.40 | $10.86 | $9.33 | 40 | 36 | $434.40 | $335.88 |
| 2018 | $0.00 | $0.00 | $8.40 | $9.63 | $8.51 | 40 | 39 | $385.20 | $333.59 |
| Total | $0.00 | $37.70 | | | | | | | |

*2018 MYA price, County Yield, and Actual Revenue are ESTIMATES based on the availabe data




**Soybeans in Riley county had 1 ARC payment, no PLC payments, and $37.70 more for ARC in 2014-2018.**

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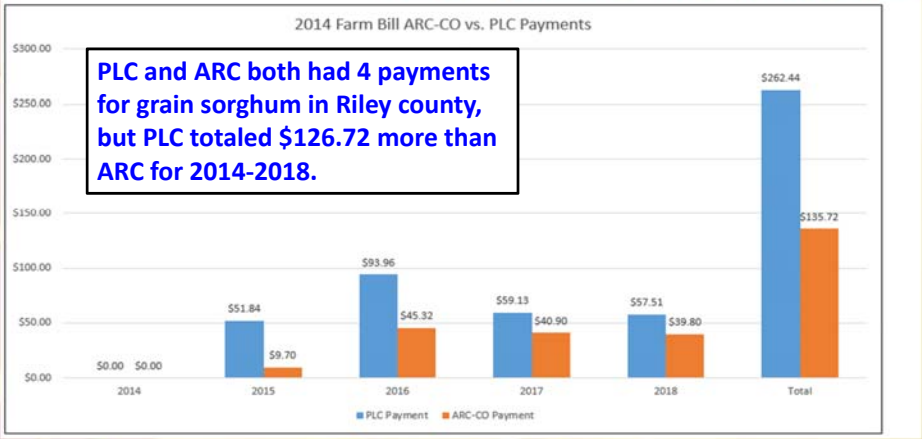
## ARC-CO vs. PLC Payment Calculator 2014-2018 Grain Sorghum-All

### Riley County

| Production Year | PLC Payment | ARC-CO Payment | Reference Price | Olympic Average Price | Actual Marketing Year Price | Olympic Average Yield | Actual County Yield | Benchmark Revenue | Actual Revenue |
|---|---|---|---|---|---|---|---|---|---|
| 2014 | $0.00 | $0.00 | $3.95 | $5.10 | $4.03 | 90 | 101 | $459.00 | $407.03 |
| 2015 | $51.84 | $9.70 | $3.95 | $5.10 | $3.31 | 89 | 115 | $453.90 | $380.65 |
| 2016 | $93.96 | $45.32 | $3.95 | $4.77 | $2.79 | 95 | 97 | $453.15 | $270.63 |
| 2017 | $59.13 | $40.90 | $3.95 | $4.09 | $3.22 | 100 | 90 | $409.00 | $289.80 |
| 2018 | $57.51 | $39.80 | $3.95 | $3.98 | $3.24 | 100 | 85 | $398.00 | $275.08 |
| Total | $262.44 | $135.72 | | | | | | | |

*2018 MYA price, County Yield, and Actual Revenue are ESTIMATES based on the availabe data




**PLC and ARC both had 4 payments for grain sorghum in Riley county, but PLC totaled $126.72 more than ARC for 2014-2018.**

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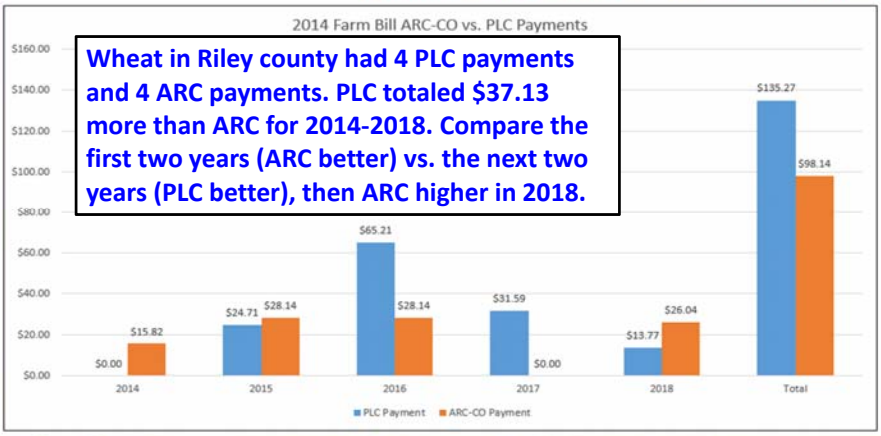
## ARC-CO vs. PLC Payment Calculator 2014-2018 Wheat-All

**Riley County**

| Production Year | PLC Payment | ARC-CO Payment | Reference Price | Olympic Average Price | Actual Marketing Year Price | Olympic Average Yield | Actual County Yield | Benchmark Revenue | Actual Revenue |
|---|---|---|---|---|---|---|---|---|---|
| 2014 | $0.00 | $15.82 | $5.50 | $6.60 | $5.99 | 45 | 40 | $297.00 | $239.60 |
| 2015 | $24.71 | $28.14 | $5.50 | $6.70 | $4.89 | 42 | 34 | $281.40 | $166.26 |
| 2016 | $65.21 | $28.14 | $5.50 | $6.70 | $3.89 | 42 | 49 | $281.40 | $190.61 |
| 2017 | $31.59 | $0.00 | $5.50 | $6.12 | $4.72 | 44 | 54 | $269.28 | $254.88 |
| 2018 | $13.77 | $26.04 | $5.50 | $5.66 | $5.16 | 46 | 38 | $260.36 | $194.53 |
| Total | $135.27 | $98.14 | | | | | | | |

**2018 MYA price, County Yield, and Actual Revenue are ESTIMATES based on the availabe data*




**Wheat in Riley county had 4 PLC payments and 4 ARC payments. PLC totaled $37.13 more than ARC for 2014-2018. Compare the first two years (ARC better) vs. the next two years (PLC better), then ARC higher in 2018.**

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## Conclusions and Implications

- **In real-time, at the deadline in March 2015, ARC-CO was a reasonable decision for Kansas crops.**
  - In many counties, there was a high probability of ARC payment for 2014 for wheat ("A bird in hand…")
- **Looking back, for some crops and some counties, PLC would have been a better choice.**
  - Other than soybeans, the other major Kansas crops (corn, grain sorghum, wheat), had PLC payments in later years in the program ("Hindsight is 20-20…").
  - BUT, ARC did look good for the first year for most crops other than grain sorghum.
  - There was little expectation of the high yields and low prices that were experienced from 2015-2018.

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## Conclusions and Implications

- **For the 2018 Farm Bill, it's a 2-year decision, NOT a 5-year decision, as it was in 2014.**
  - What do you expect prices to be over the next two years?
  - What do you expect yields to be over the next two years?
  - Is SCO a consideration? (Nudges toward PLC)
- **Implication: be careful of making the decision based solely on the result of the last five years or feeling like you didn't get it right in 2014.**

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# Economics of the ARC/PLC decision and MYA Outlook

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# Corn & Sorghum Markets

KANSAS STATE UNIVERSITY Department of Agricultural Economics

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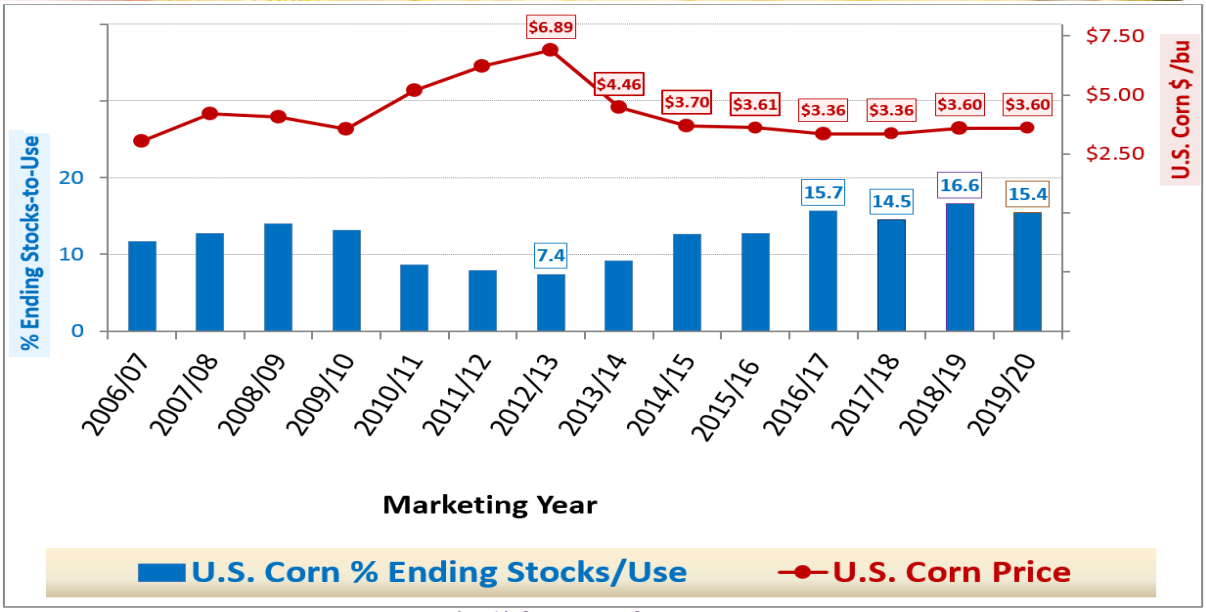
# U.S. Corn Supply and Demand

| Item | 2018/2019 Estimate | 2018/2019 Change from July 11 | 2019/2020 Forecast | 2019/2020 Change from July 11 | Change from 2018/2019 |
|---|---|---|---|---|---|
| Planted area (million acres) | 89.1 | -- | 90.0 | -1.7 | 0.9 |
| Harvested area (million acres) | 81.7 | -- | 82.0 | -1.6 | 0.3 |
| Yield (bushels per acre) | 176.4 | -- | 169.5 | 3.5 | -6.9 |
| | | | *Million bushels* | | |
| Beginning stocks | 2,140 | -- | 2,360 | 20 | 220 |
| Production | 14,420 | -- | 13,901 | 26 | -519 |
| Imports | 30 | -5 | 50 | -- | 20 |
| Total supply | 16,590 | -5 | 16,311 | 46 | -279 |
| Feed and residual | 5,275 | -- | 5,175 | -- | -100 |
| Food, seed, and industrial | 6,855 | -25 | 6,905 | -25 | 50 |
| Ethanol | 5,425 | -25 | 5,475 | -25 | 50 |
| Domestic use | 12,130 | -25 | 12,080 | -25 | -50 |
| Exports | 2,100 | -- | 2,050 | -100 | -50 |
| Total use | 14,230 | -25 | 14,130 | -125 | -100 |
| Ending stocks | 2,360 | 20 | 2,181 | 171 | -179 |
| | | | *Percent* | | |
| Stocks to use ratio | 16.6 | 0.2 | 15.4 | 1.3 | -1.2 |
| | | | *Dollars per bushel* | | |
| Average market price | 3.60 | -- | 3.60 | -0.10 | -- |

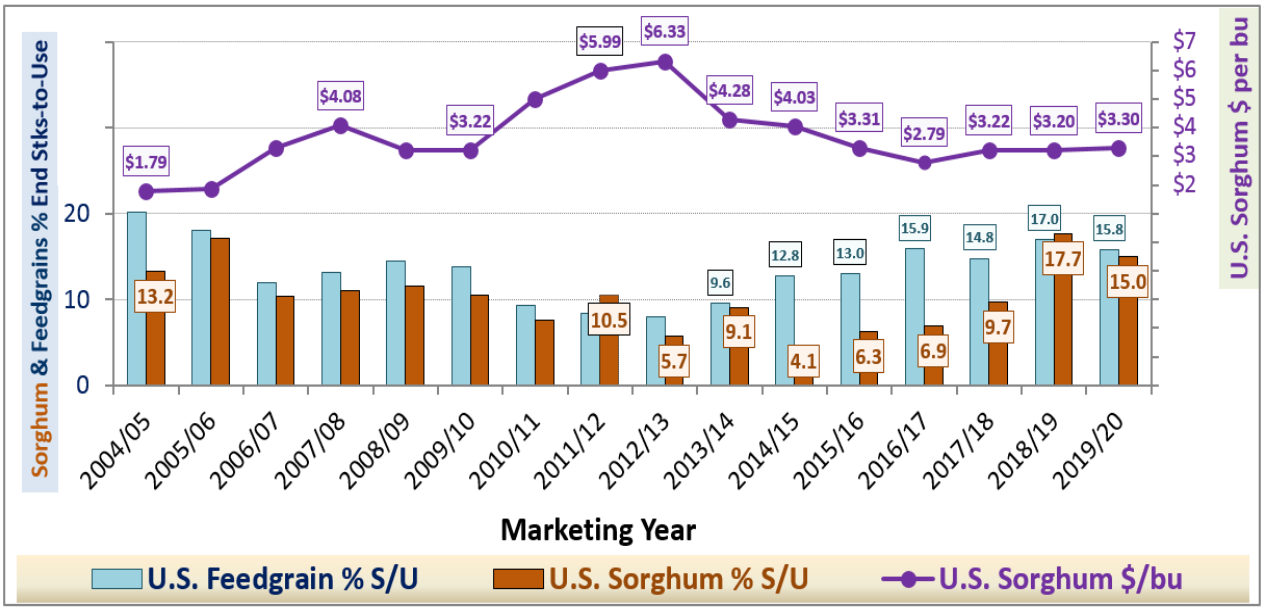
-- No change.

August 12, 2019

# U.S. Corn % Stocks/Use *vs* Price$




# U.S. Sorghum % Stocks/Use *vs* Price$

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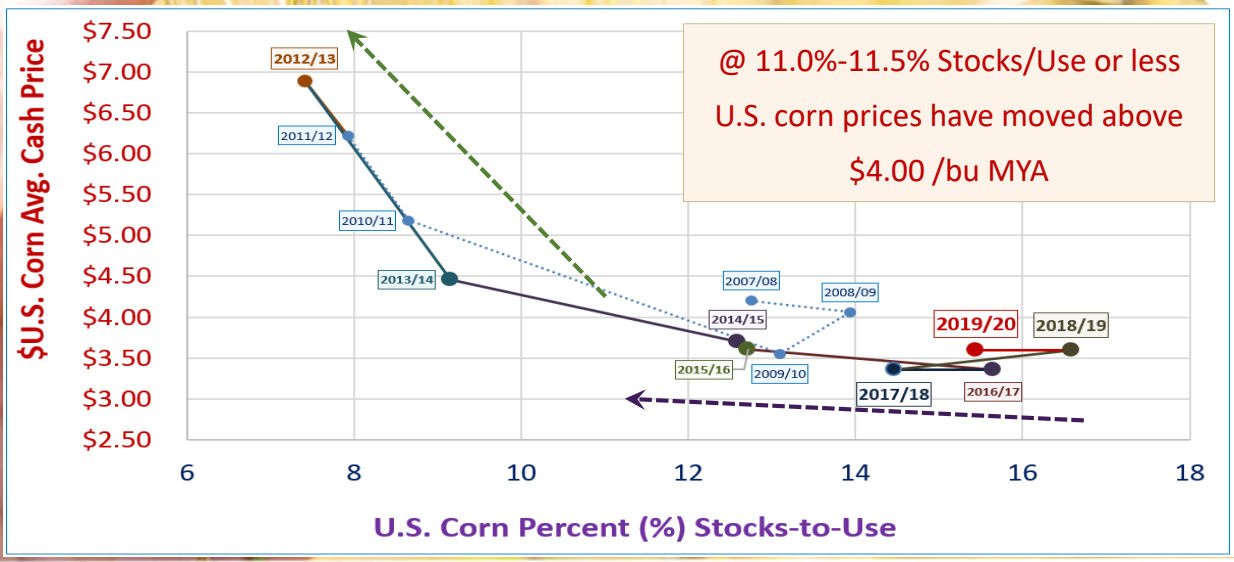
# U.S. Corn % Stocks/Use *vs* Price$

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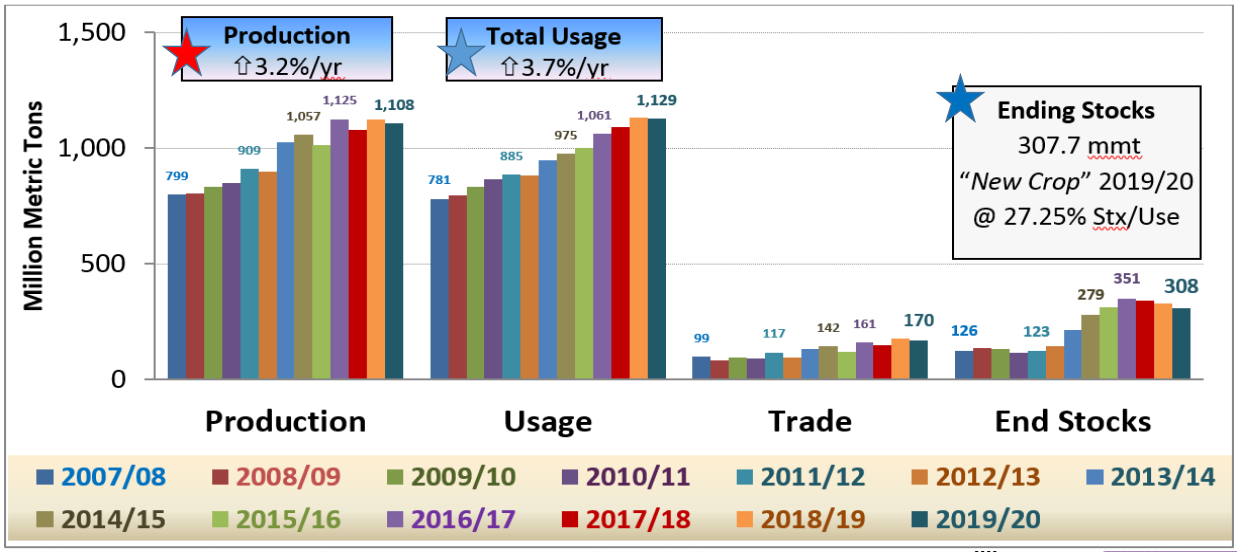
# World Corn Supply, Use & Stocks

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# World Corn Supply and Use

| Item | 2018/2019 Estimate | 2018/2019 Change from July 11 | 2019/2020 Forecast | 2019/2020 Change from July 11 | Change from 2018/2019 |
|---|---|---|---|---|---|
| | | | *Million Tons* | | |
| Beginning stocks | 339.4 | 0.1 | 328.6 | -0.2 | -10.8 |
| Production | 1,123.0 | 0.3 | 1,108.2 | 3.1 | -14.8 |
| Total Supply | 1,462.4 | 0.4 | 1,436.8 | 2.9 | -25.6 |
| Feed use | 696.4 | -2.5 | 694.4 | -2.0 | -2.0 |
| Total use | 1,133.8 | 0.6 | 1,129.1 | -5.9 | -4.7 |
| Trade | 176.2 | 3.8 | 169.9 | -0.9 | -6.3 |
| Ending Stocks | 328.6 | -0.2 | 307.7 | 8.8 | -20.9 |

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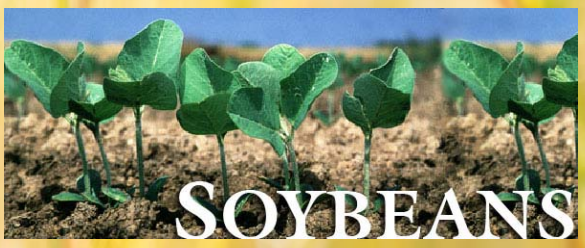
# Soybean & Cotton Markets

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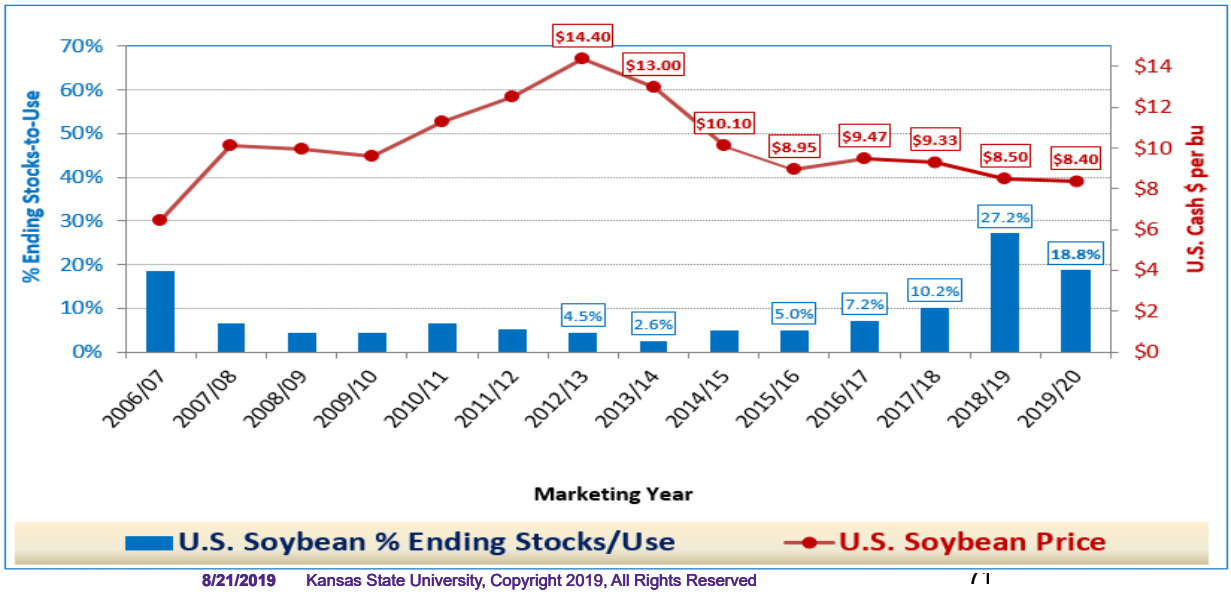
# U.S. Soybean % Stocks/Use vs Price$

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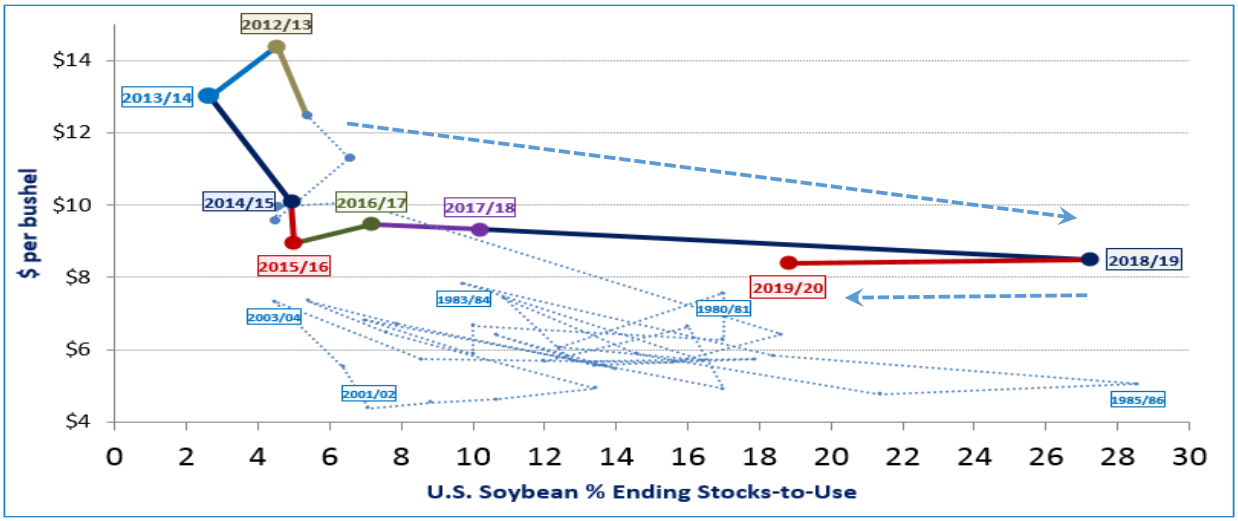
# U.S. Soybean $ vs U.S. Stocks-to-Use

## MY 1973/74 through "New Crop" MY 2018/19

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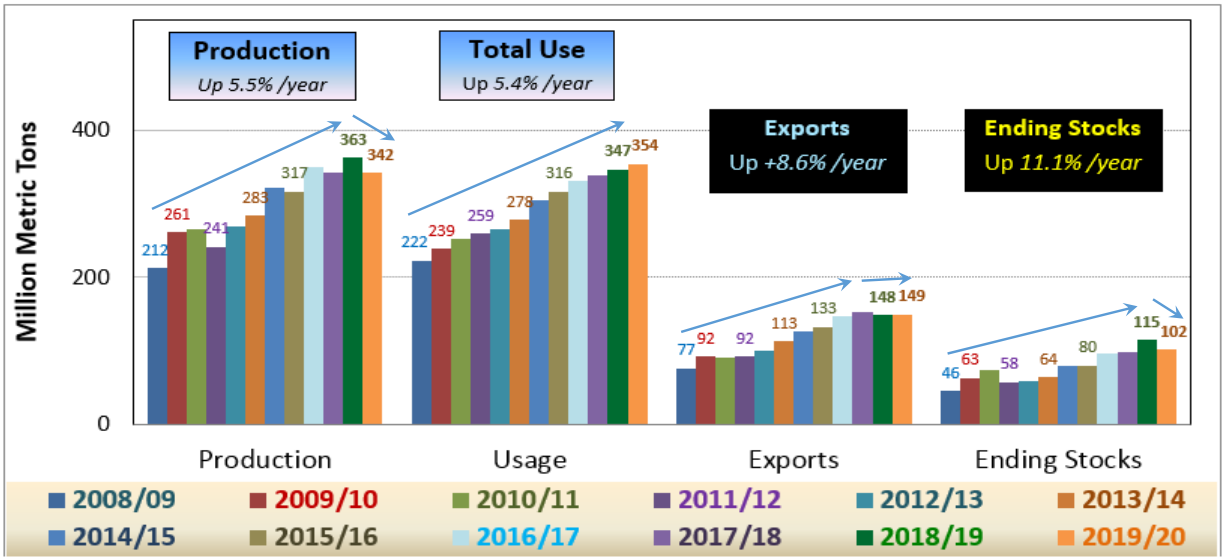
# World Soybean Supply, Use & Stocks

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# World Soybean Supply and Use

| Item | 2018/2019 Estimate | 2018/2019 Change from July 11 | 2019/2020 Forecast | 2019/2020 Change from July 11 | 2019/2020 Change from 2018/2019 |
|---|---|---|---|---|---|
| | | | *Million Tons* | | |
| Beginning stocks | 99.1 | ** | 114.5 | 1.6 | 15.4 |
| Production | 362.9 | ** | 341.8 | -5.2 | -21.0 |
| Total Supply | 462.0 | ** | 456.4 | -3.7 | -5.6 |
| Crush | 299.8 | -1.2 | 307.1 | -0.8 | 7.3 |
| Total use | 346.6 | -1.0 | 354.3 | -0.7 | 7.7 |
| Trade | 148.3 | -1.9 | 149.2 | -2.1 | 0.9 |
| Ending Stocks | 114.5 | 1.6 | 101.7 | -2.8 | -12.8 |
| Addendum | | | | | |
| Beginning stocks | | | | | |
| Argentina plus Brazil | 56.5 | -- | 57.6 | 1.4 | 1.1 |
| Imports* | | | | | |
| China | 83.0 | -2.0 | 85.0 | -2.0 | 2.0 |

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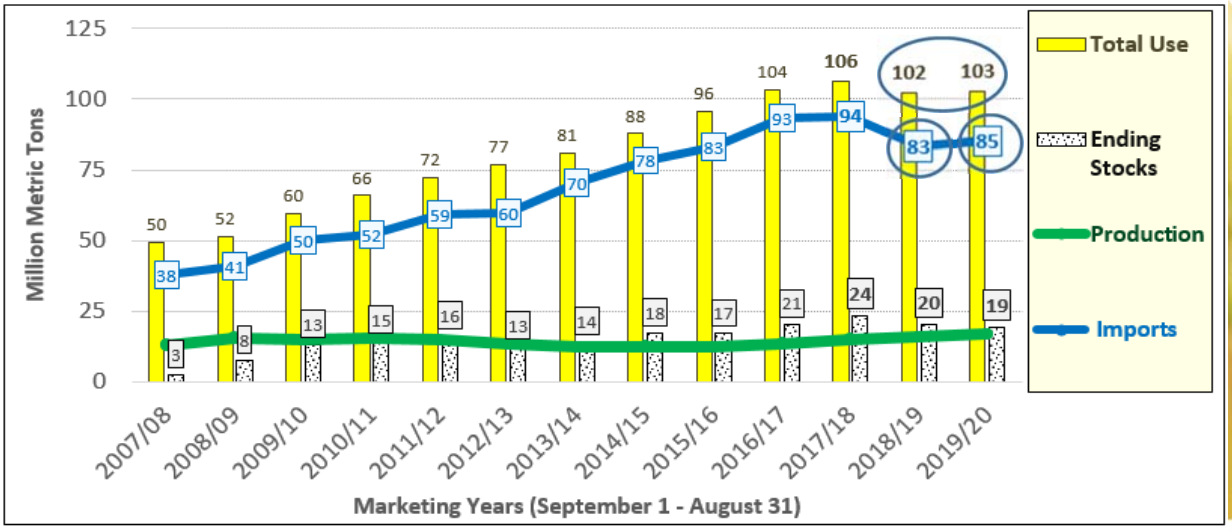
# China Soybean Supply-Demand

MY 2006/07

through "New Crop" MY 2019/20

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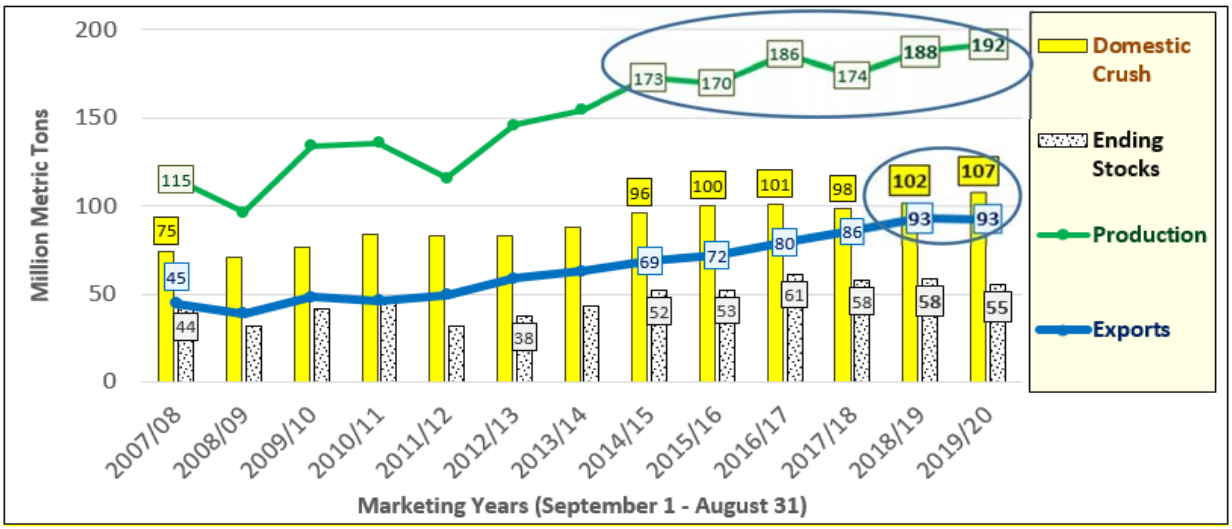
# South America Soybean S-D

MY 2006/07

through "New Crop" MY 2019/20

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# Wheat Markets

KANSAS STATE UNIVERSITY Department of Agricultural Economics

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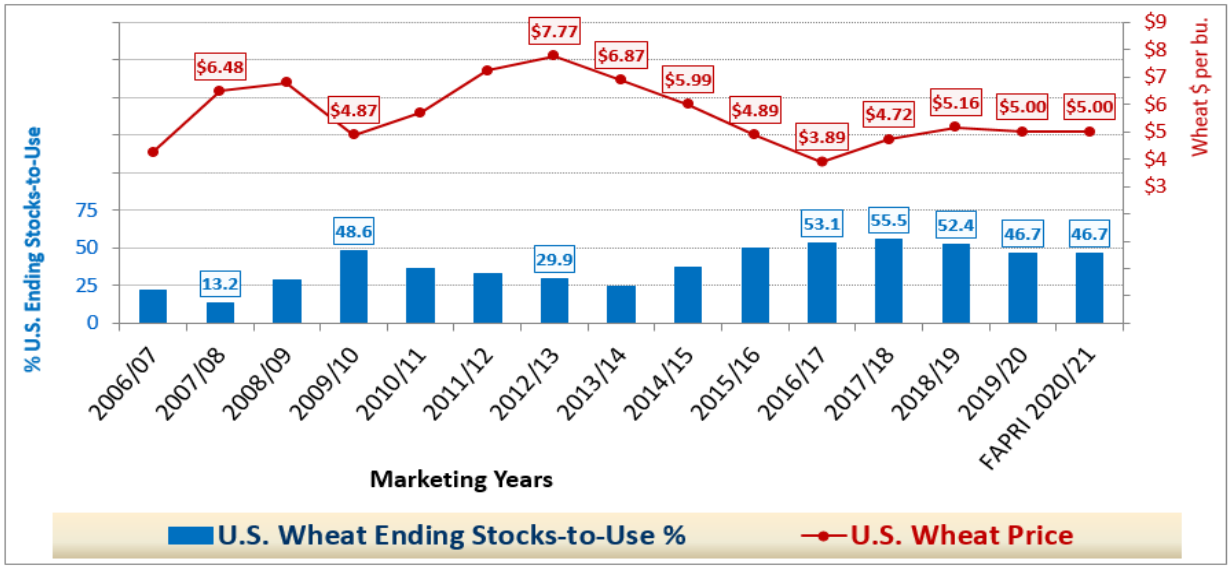
## U.S. Wheat Supply and Demand

| Item | 2018/2019 estimate | 2019/2020 forecast | Change from July 11 | Change from 2018/2019 |
|---|---|---|---|---|
| Planted area (million acres) | 47.8 | 45.6 | -- | -2.2 |
| Harvested area (million acres) | 39.6 | 38.4 | -- | -1.2 |
| Yield (bushels per acre) | 47.6 | 51.6 | 1.5 | 4.0 |
| | | *Million bushels* | | |
| Beginning stocks | 1,099 | 1,072 | -- | -27 |
| Production | 1,884 | 1,980 | 59 | 96 |
| Imports | 135 | 135 | -5 | ** |
| Total supply | 3,118 | 3,187 | 54 | 69 |
| Food use | 955 | 960 | -5 | 5 |
| Seed | 60 | 68 | -- | 8 |
| Feed and residual | 96 | 170 | 20 | 74 |
| Domestic use | 1,110 | 1,198 | 15 | 88 |
| Exports | 936 | 975 | 25 | 39 |
| Total use | 2,046 | 2,173 | 40 | 127 |
| Ending stocks | 1,072 | 1,014 | 14 | -58 |
| | | *Percent* | | |
| Stocks to use ratio | 52.4 | 46.7 | -0.2 | -5.7 |
| | | *Dollars per bushel* | | |
| Average market price | 5.16 | 5.00 | -0.20 | -0.16 |

-- No change.

August 12, 2019

# U.S. Wheat Ending Stocks & Prices

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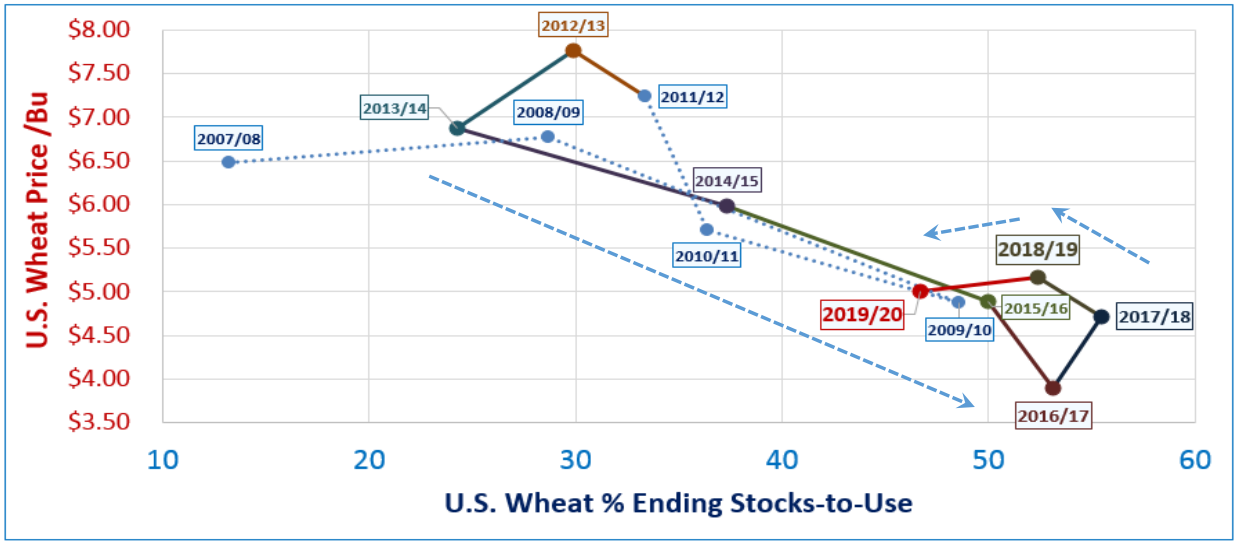
# U.S. Wheat Price *vs* U.S. Stocks-to-Use

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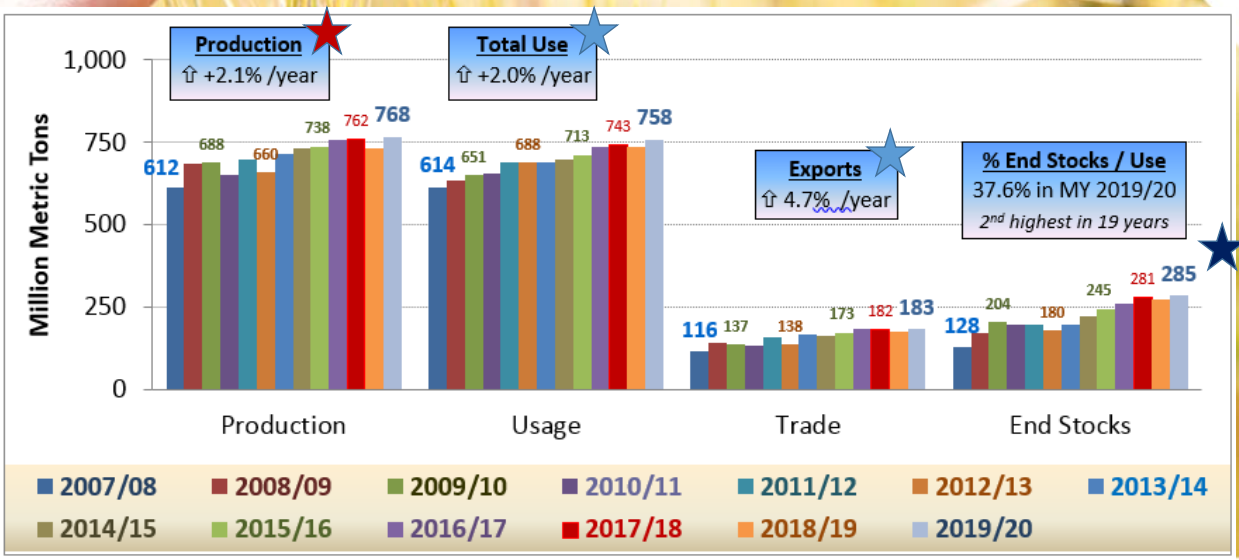
# World Wheat Supply, Use & Stocks

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# World Wheat Supply and Use

| Item | 2018/2019 estimate | 2019/2020 forecast | Change from July 11 | Change from 2018/2019 |
|---|---|---|---|---|
| | | *Million Tons* | | |
| Beginning stocks | 281.2 | 275.5 | 0.3 | -5.7 |
| Production | 730.5 | 768.1 | -3.4 | 37.5 |
| Total Supply | 1,011.7 | 1,043.6 | -3.0 | 31.8 |
| Feed use | 140.1 | 150.3 | -0.9 | 10.3 |
| Total use | 736.2 | 758.2 | -2.0 | 21.9 |
| Trade | 174.2 | 182.6 | -0.5 | 8.5 |
| Ending Stocks | 275.5 | 285.4 | -1.1 | 9.9 |

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## D. O'Brien Thoughts for All Grain Markets #1

- Strong likelihood of a Smaller U.S. corn crop in year 2019 than the markets are factoring in right now – with prices being supported from short supplies in "New Crop" MY 2019/10
- There are a number of either negative or worrisome negative trends wrt the demand for feedgrains
  - Weak – moderate ethanol demand for feedgrains (especially at higher prices!). Plant closures from poor profits to affect the demand side for feedgrains. more….

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## D. O'Brien Thoughts for Feedgrain Markets #2

- Livestock Feed demand could be affected by consumer's confidence in the U.S. economy in the midst of near incivility & political unrest in some parts of the country (Antifa, the West Coast, Trade Disputes, etc., etc.)
  - Although production prospects for 2019 U.S. Feedgrains are at risk, the fear of weakening &/or uncertain demand is negatively impacting corn futures markets.

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# D. O'Brien Thoughts for Feedgrain Markets #3

- With this unsettled environment – proactive marketing of feedgrains at profitable price levels is advised
  - Although strong price levels may come this fall If 2019 U.S. corn production falls below 13 billion bushels, with heightened uncertainty in the economic environment – take profitable prices and limit the "time value" of grain market risk
  - Consider consistent, judicious, systematic use of Ag Put and Call Options to limit market risk exposure if you have not done so already *(Reference recent quote from Louis Dreyfus CEO…..)*

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# The Tradeoff Between ARC-CO and PLC

- **Compares ARC-CO vs. PLC for upcoming year (2019/2020 marketing year)**

| County: | Riley | Crop: | Corn | Type: | Non-Irrigated |
|---|---|---|---|---|---|
| | | | ARC | | PLC |
| 5 Yr. Olympic Avg. County Yield | | | 113.9 | Program Yield | 113.9 |
| 5 Yr. Olympic Avg. MYA Price | | | $3.70 | Reference Price | $3.70 |
| Benchmark Revenue | | | $421.43 | | |
| Guaranteed Revenue | | | $362.43 | PLC> ARC-CO max @ | $3.33 |

- **Select:**
  - County
  - Commodity
  - Irrigation designation (All; Non-Irrigated; or Irrigated)
  - PLC Program Yield
- **Spreadsheet at:**
  - http://www.agmanager.info/ag-policy/2018-farm-bill

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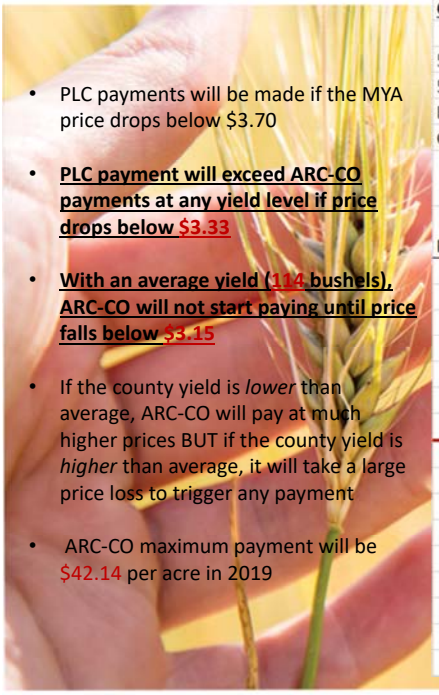

- PLC payments will be made if the MYA price drops below $3.70
- **PLC payment will exceed ARC-CO payments at any yield level if price drops below $3.33**
- **With an average yield (114 bushels), ARC-CO will not start paying until price falls below $3.15**
- If the county yield is *lower* than average, ARC-CO will pay at much higher prices BUT if the county yield is *higher* than average, it will take a large price loss to trigger any payment
- ARC-CO maximum payment will be $42.14 per acre in 2019

| County: | Riley | | Crop: | Corn | | Type: | Non-Irrigated |
|---|---|---|---|---|---|---|---|
| | | | | ARC | | | PLC |
| 5 Yr. Olympic Avg. County Yield | | | | 113.9 | | Program Yield | 113.9 |
| 5 Yr. Olympic Avg. MYA Price | | | | $3.70 | | Reference Price | $3.70 |
| Benchmark Revenue | | | | $421.43 | | | |
| Guaranteed Revenue | | | | $362.43 | | PLC> ARC-CO max @ | $3.33 |

| | | Yield | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 68 | 76 | 84 | 93 | 103 | **114** | 125 | 137 |
| MYA Price | PLC Payment | ARC Payment | | | | | | | |
| $4.17 | $0.00 | $42.14 | $42.14 | $12.15 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $4.09 | $0.00 | $42.14 | $42.14 | $18.87 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $4.01 | $0.00 | $42.14 | $42.14 | $25.59 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.93 | $0.00 | $42.14 | $42.14 | $32.31 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.85 | $0.00 | $42.14 | $42.14 | $39.03 | $4.38 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.77 | $0.00 | $42.14 | $42.14 | $42.14 | $11.82 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.70 | $0.00 | $42.14 | $42.14 | $42.14 | $18.33 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.63 | $7.97 | $42.14 | $42.14 | $42.14 | $24.84 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.56 | $15.95 | $42.14 | $42.14 | $42.14 | $31.35 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.49 | $23.92 | $42.14 | $42.14 | $42.14 | $37.86 | $2.96 | $0.00 | $0.00 | $0.00 |
| $3.42 | $31.89 | $42.14 | $42.14 | $42.14 | $42.14 | $10.17 | $0.00 | $0.00 | $0.00 |
| $3.35 | $39.87 | $42.14 | $42.14 | $42.14 | $42.14 | $17.38 | $0.00 | $0.00 | $0.00 |
| $3.28 | $47.84 | $42.14 | $42.14 | $42.14 | $42.14 | $24.59 | $0.00 | $0.00 | $0.00 |
| $3.21 | $55.81 | $42.14 | $42.14 | $42.14 | $42.14 | $31.80 | $0.00 | $0.00 | $0.00 |
| $3.15 | $62.65 | $42.14 | $42.14 | $42.14 | $42.14 | $37.98 | $3.33 | $0.00 | $0.00 |
| $3.09 | $69.48 | $42.14 | $42.14 | $42.14 | $42.14 | $42.14 | $10.17 | $0.00 | $0.00 |

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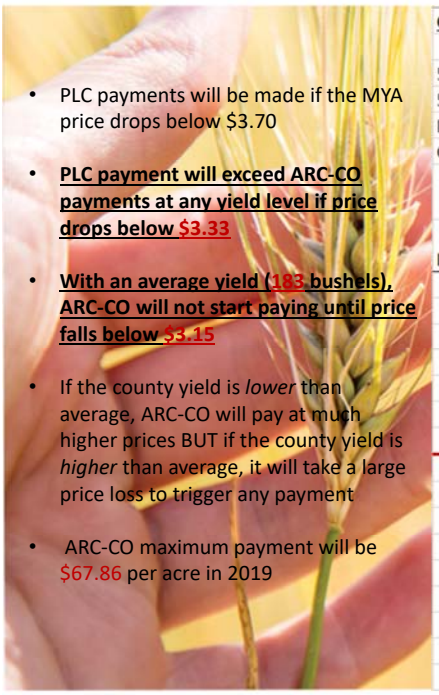

- PLC payments will be made if the MYA price drops below $3.70
- **PLC payment will exceed ARC-CO payments at any yield level if price drops below $3.33**
- **With an average yield (183 bushels), ARC-CO will not start paying until price falls below $3.15**
- If the county yield is *lower* than average, ARC-CO will pay at much higher prices BUT if the county yield is *higher* than average, it will take a large price loss to trigger any payment
- ARC-CO maximum payment will be $67.86 per acre in 2019

| County: | Riley | | Crop: | Corn | | Type: | Irrigated |
|---|---|---|---|---|---|---|---|
| | | | | ARC | | | PLC |
| 5 Yr. Olympic Avg. County Yield | | | | 183.4 | | Program Yield | 183.4 |
| 5 Yr. Olympic Avg. MYA Price | | | | $3.70 | | Reference Price | $3.70 |
| Benchmark Revenue | | | | $678.58 | | | |
| Guaranteed Revenue | | | | $583.58 | | PLC> ARC-CO max @ | $3.33 |

| | | Yield | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 109 | 121 | 134 | 149 | 165 | **183** | 201 | 220 |
| MYA Price | PLC Payment | ARC Payment | | | | | | | |
| $4.17 | $0.00 | $67.86 | $67.86 | $24.80 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $4.09 | $0.00 | $67.86 | $67.86 | $35.52 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $4.01 | $0.00 | $67.86 | $67.86 | $46.24 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.93 | $0.00 | $67.86 | $67.86 | $56.96 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.85 | $0.00 | $67.86 | $67.86 | $67.68 | $9.93 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.77 | $0.00 | $67.86 | $67.86 | $67.86 | $21.85 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.70 | $0.00 | $67.86 | $67.86 | $67.86 | $32.28 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.63 | $12.84 | $67.86 | $67.86 | $67.86 | $42.71 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.56 | $25.68 | $67.86 | $67.86 | $67.86 | $53.14 | $0.00 | $0.00 | $0.00 | $0.00 |
| $3.49 | $38.51 | $67.86 | $67.86 | $67.86 | $63.57 | $7.73 | $0.00 | $0.00 | $0.00 |
| $3.42 | $51.35 | $67.86 | $67.86 | $67.86 | $67.86 | $19.28 | $0.00 | $0.00 | $0.00 |
| $3.35 | $64.19 | $67.86 | $67.86 | $67.86 | $67.86 | $30.83 | $0.00 | $0.00 | $0.00 |
| $3.28 | $77.03 | $67.86 | $67.86 | $67.86 | $67.86 | $42.38 | $0.00 | $0.00 | $0.00 |
| $3.21 | $89.87 | $67.86 | $67.86 | $67.86 | $67.86 | $53.93 | $0.00 | $0.00 | $0.00 |
| $3.15 | $100.87 | $67.86 | $67.86 | $67.86 | $67.86 | $63.83 | $7.13 | $0.00 | $0.00 |
| $3.09 | $111.87 | $67.86 | $67.86 | $67.86 | $67.86 | $67.86 | $18.11 | $0.00 | $0.00 |

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- PLC payments will be made if the MYA price drops below $5.50
- **PLC payment will exceed ARC-CO payments at any yield level if price drops below $4.94**
- **With an average yield (45 bushels), ARC-CO will not start paying until price falls below $4.77**
- If the county yield is *lower* than average, ARC-CO will pay at much higher prices BUT if the county yield is *higher* than average, it will take a large price loss to trigger any payment
- ARC-CO maximum payment will be $25.34 per acre in 2019

| County: | Riley | | Crop: | Wheat | | Type: | Non-Irrigated |
|---|---|---|---|---|---|---|---|
| | | | | ARC | | | PLC |
| 5 Yr. Olympic Avg. County Yield | | | | 45.0 | Program Yield | | 45.0 |
| 5 Yr. Olympic Avg. MYA Price | | | | $5.63 | Reference Price | | $5.50 |
| Benchmark Revenue | | | | $253.35 | | | |
| Guaranteed Revenue | | | | $217.88 | PLC> ARC-CO max @ | | $4.94 |

| | | Yield | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 27 | 30 | 33 | 37 | 41 | **45** | 50 | 54 |
| **MYA Price** | **PLC Payment** | **ARC Payment** | | | | | | | |
| $6.19 | $0.00 | $25.34 | $25.34 | $13.61 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $6.07 | $0.00 | $25.34 | $25.34 | $17.57 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $5.95 | $0.00 | $25.34 | $25.34 | $21.53 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| $5.83 | $0.00 | $25.34 | $25.34 | $25.34 | $2.17 | $0.00 | $0.00 | $0.00 | $0.00 |
| $5.72 | $0.00 | $25.34 | $25.34 | $25.34 | $6.24 | $0.00 | $0.00 | $0.00 | $0.00 |
| $5.61 | $0.00 | $25.34 | $25.34 | $25.34 | $10.31 | $0.00 | $0.00 | $0.00 | $0.00 |
| $5.50 | $0.00 | $25.34 | $25.34 | $25.34 | $14.38 | $0.00 | $0.00 | $0.00 | $0.00 |
| $5.39 | $4.95 | $25.34 | $25.34 | $25.34 | $18.45 | $0.00 | $0.00 | $0.00 | $0.00 |
| $5.28 | $9.90 | $25.34 | $25.34 | $25.34 | $22.52 | $1.40 | $0.00 | $0.00 | $0.00 |
| $5.17 | $14.85 | $25.34 | $25.34 | $25.34 | $25.34 | $5.91 | $0.00 | $0.00 | $0.00 |
| $5.07 | $19.35 | $25.34 | $25.34 | $25.34 | $25.34 | $10.01 | $0.00 | $0.00 | $0.00 |
| $4.97 | $23.85 | $25.34 | $25.34 | $25.34 | $25.34 | $14.11 | $0.00 | $0.00 | $0.00 |
| $4.87 | $28.35 | $25.34 | $25.34 | $25.34 | $25.34 | $18.21 | $0.00 | $0.00 | $0.00 |
| $4.77 | $32.85 | $25.34 | $25.34 | $25.34 | $25.34 | $22.31 | $3.23 | $0.00 | $0.00 |
| $4.67 | $37.35 | $25.34 | $25.34 | $25.34 | $25.34 | $25.34 | $7.73 | $0.00 | $0.00 |
| $4.58 | $41.40 | $25.34 | $25.34 | $25.34 | $25.34 | $25.34 | $11.78 | $0.00 | $0.00 |

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# OSU-KSU Farm Bill Decision Aid

by A. Hagerman, E. DeVuyst, M. Taylor, and R. Reid

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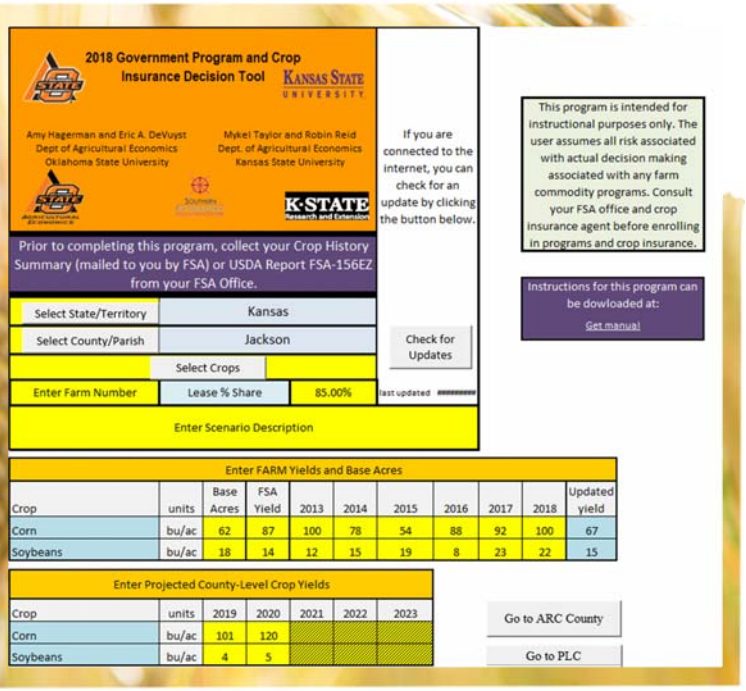
- Excel-based spreadsheet
  - Can be downloaded soon from www.AgManager.info
- Information you will need
  - FSA report 156EZ for each farm
    - FSA program yields
    - Commodity base acres
  - Farm yields 2013-2018
  - APH/crop insurance information
  - Expected plantings 2019-2020
- Updates continuously posted
  - Monthly update of prices
  - Please report errors or questions

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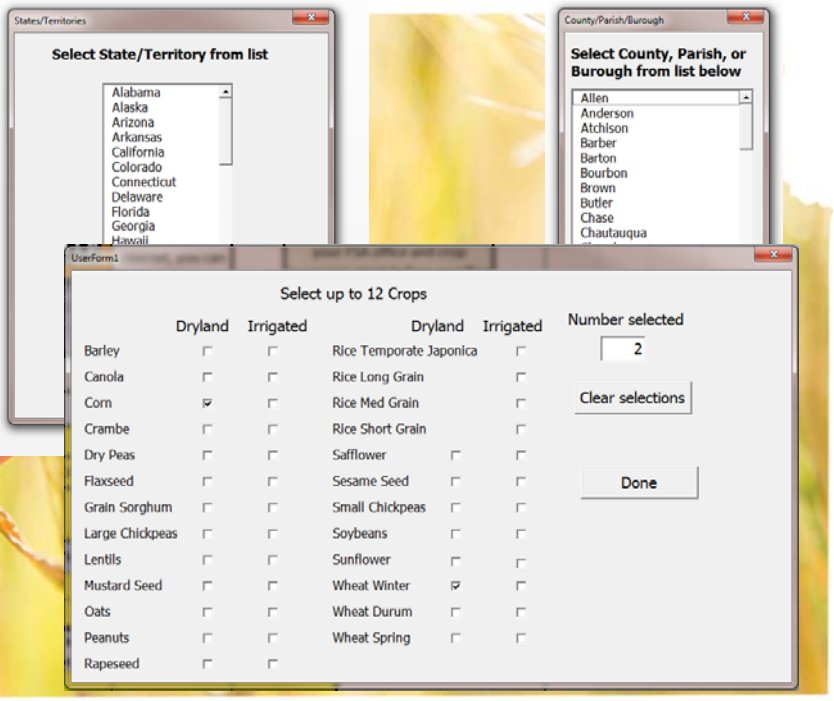
- Input your farm information
  - Select your state, county
  - Select your crops
- Data in spreadsheet for all states, counties, and crops
  - Updates to these data will be made as FSA makes data available
- Data for each farm can be saved
  - Allows you to run different yield and price scenarios without re-entering your farm data

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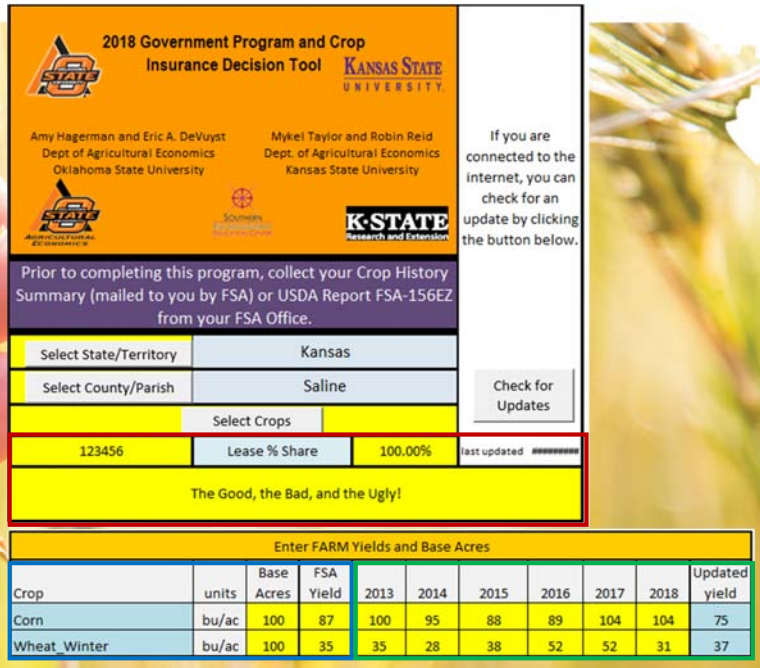
- Descriptors
  - FSA Farm number
  - % Lease Share
  - Scenario Description
- FSA data
  - Enter your base acres and program yields (FSA Yield) for all crops
- Historical Yields
  - 2013-2017 for Yield Update
  - 2018 for ARC-IC history




Enter FARM Yields and Base Acres

| Crop | units | Base Acres | FSA Yield | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Updated yield |
|---|---|---|---|---|---|---|---|---|---|---|
| Corn | bu/ac | 100 | 87 | 100 | 95 | 88 | 89 | 104 | 104 | 75 |
| Wheat_Winter | bu/ac | 100 | 35 | 35 | 28 | 38 | 52 | 52 | 31 | 37 |

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Enter FARM Yields and Base Acres

| Crop | units | Base Acres | FSA Yield | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Updated yield |
|---|---|---|---|---|---|---|---|---|---|---|
| Corn | bu/ac | 100 | 87 | 100 | 95 | 88 | 89 | 104 | 104 | 75 |
| Wheat_Winter | bu/ac | 100 | 35 | 35 | 28 | 38 | 52 | 52 | 31 | 37 |

- Updating yield
  - Recall that the formula uses 90% of your average yield from 2013-2017 with a plug yield for low yield years
  - A “detrending” factor is also applied
  - Will go into effect starting with the crop harvested in 2020

***Bottom line: If you UPDATE Yield is higher than your current FSA yield, UPDATE!!!***

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- Next steps require your expectations of the future…
  - County Level Yield scenarios
  - Expected prices
  - Farm Level Yields
  - Projected Planted Acres

| Enter Projected County-Level Crop Yields | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | bu/ac | | | | | |
| Wheat_Winter | bu/ac | | | | | |

| Enter Projected Crop Prices | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | $/bu | | | | | |
| Wheat_Winter | $/bu | | | | | |

| Enter Projected Farm-Level Yields | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | bu/ac | | | | | |
| Wheat_Winter | bu/ac | | | | | |

| Enter Projected Planted Acres | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2020 | 2023 |
| Corn | acres | | | | | |
| Wheat_Winter | acres | | | | | |

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- You likely will have an idea 2019 County Yields
  - Start with “normal” yields
  - Run different scenarios
- Price expectations
  - National price, not cash price!
  - Run different scenarios

| Enter Projected County-Level Crop Yields | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | bu/ac | 100 | 100 | | | |
| Wheat_Winter | bu/ac | 40 | 40 | | | |

| Enter Projected Crop Prices | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | $/bu | 3.81 | 3.82 | | | |
| Wheat_Winter | $/bu | 5.31 | 5.30 | | | |

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**ARC-County**
Crop Yield Data for Your **County**

| Crop | 2013 Yield | 2014 Yield | 2015 Yield | 2016 Yield | 2017 Yield | 2019 Yield Guarantee |
|---|---|---|---|---|---|---|
| Corn | 133.0 | 108.0 | 60.0 | 60.0 | 122.0 | 103.3 |
| Wheat_Winter | 47.0 | 41.0 | 44.0 | 45.0 | 53.0 | 43.3 |

| Crop | 2019 Yield | 2020 Yield | 2021 Yield | 2022 Yield | 2023 Yield |
|---|---|---|---|---|---|
| Corn | 100.0 | 100.0 | | | |
| Wheat_Winter | 40.0 | 40.0 | | | |

| Crop | 2019 Price | 2020 Price | 2021 Price | 2022 Price | 2023 Price |
|---|---|---|---|---|---|
| Corn | $ 3.810 | $ 3.820 | $ - | $ - | $ - |
| Wheat_Winter | $ 5.310 | $ 5.300 | $ - | $ - | $ - |

| Crop | 2013 Price | 2014 Price | 2015 Price | 2016 Price | 2017 Price |
|---|---|---|---|---|---|
| Corn | $ 4.460 | $ 3.700 | $ 3.610 | $ 3.360 | $ 3.360 |
| Wheat_Winter | $ 6.870 | $ 5.990 | $ 4.890 | $ 3.890 | $ 4.720 |

| Crop | Base Acres | Loan Rate | Effective Ref Price | Benchmark Price 2019 | Benchmark Price 2020 |
|---|---|---|---|---|---|
| Corn | 100.0 | $ 2.2000 | $ 3.70 | $ 3.70 | $ 3.70 |
| Wheat_Winter | 100.0 | $ 3.3800 | $ 3.70 | $ 5.66 | $ 5.50 |

| Crop | 2019 ARC Benchmark | 2019 ARC Guarantee | 2019 Actual Revenue | 2019 Payment Rate | 2019 Max Payment |
|---|---|---|---|---|---|
| Corn | $ 382.21 | $ 328.70 | $ 381.00 | $ - | $ 38.22 |
| Wheat_Winter | $ 245.22 | $ 210.89 | $ 212.40 | $ - | $ 24.52 |

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**ARC-County**
Crop Yield Data for Your **County**

| Crop | 2013 Yield | 2014 Yield | 2015 Yield | 2016 Yield | 2017 Yield | 2019 Yield Guarantee |
|---|---|---|---|---|---|---|
| Corn | 133.0 | 108.0 | 60.0 | 60.0 | 122.0 | 103.3 |
| Wheat_Winter | 47.0 | 41.0 | 44.0 | 45.0 | 53.0 | 43.3 |

| Crop | 2019 Yield | 2020 Yield | 2021 Yield | 2022 Yield | 2023 Yield |
|---|---|---|---|---|---|
| Corn | 100.0 | 100.0 | | | |
| Wheat_Winter | 40.0 | 40.0 | | | |

| Crop | ARC-County Payments Paid on 86% of Base Acres and 100% Share | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | $ - | $ - | | | |
| Wheat_Winter | $ - | $ - | | | |
| Totals | $ - | $ - | | | |

| Crop | Base Acres | Loan Rate | Effective Ref Price | Benchmark Price 2019 | Benchmark Price 2020 |
|---|---|---|---|---|---|
| Corn | 100.0 | $ 2.2000 | $ 3.70 | $ 3.70 | $ 3.70 |
| Wheat_Winter | 100.0 | $ 3.3800 | $ 3.70 | $ 5.66 | $ 5.50 |

| Crop | 2019 ARC Benchmark | 2019 ARC Guarantee | 2019 Actual Revenue | 2019 Payment Rate | 2019 Max Payment |
|---|---|---|---|---|---|
| Corn | $ 382.21 | $ 328.70 | $ 381.00 | $ - | $ 38.22 |
| Wheat_Winter | $ 245.22 | $ 210.89 | $ 212.40 | $ - | $ 24.52 |

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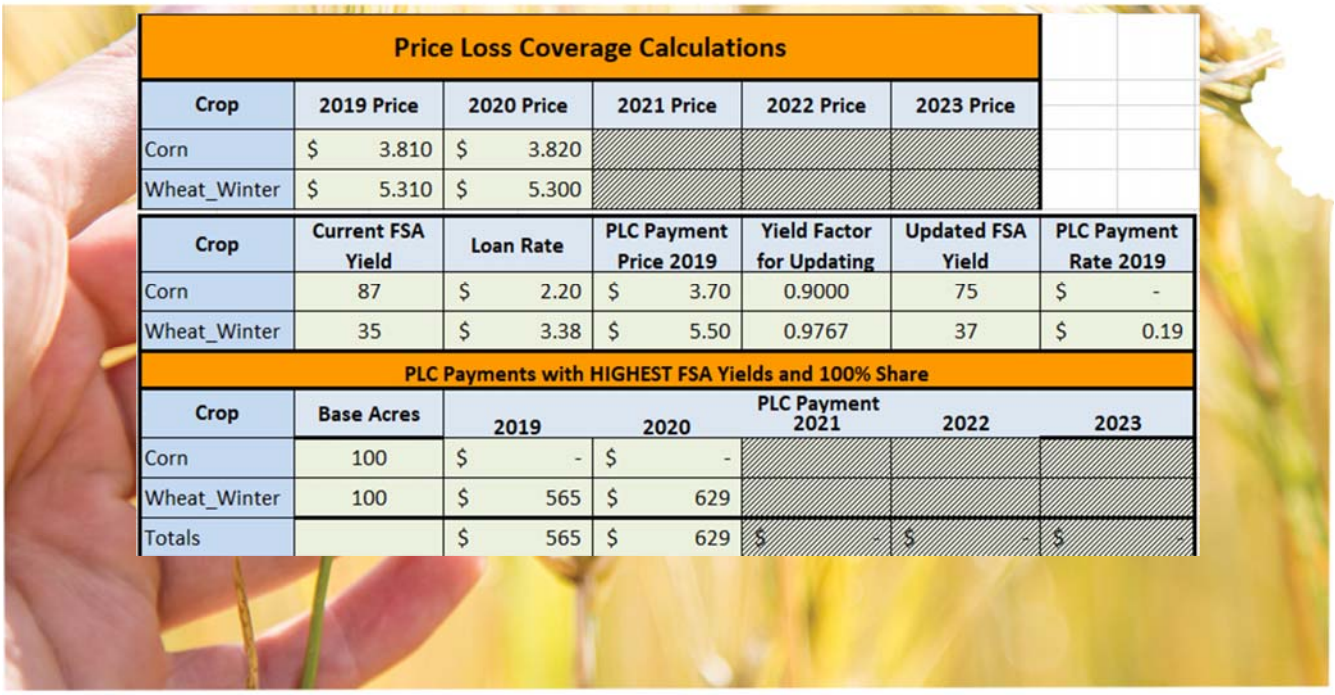

| Price Loss Coverage Calculations | | | | | |
|---|---|---|---|---|---|
| Crop | 2019 Price | 2020 Price | 2021 Price | 2022 Price | 2023 Price |
| Corn | $ 3.810 | $ 3.820 | | | |
| Wheat_Winter | $ 5.310 | $ 5.300 | | | |

| Crop | Current FSA Yield | Loan Rate | PLC Payment Price 2019 | Yield Factor for Updating | Updated FSA Yield | PLC Payment Rate 2019 |
|---|---|---|---|---|---|---|
| Corn | 87 | $ 2.20 | $ 3.70 | 0.9000 | 75 | $ - |
| Wheat_Winter | 35 | $ 3.38 | $ 5.50 | 0.9767 | 37 | $ 0.19 |

| PLC Payments with HIGHEST FSA Yields and 100% Share | | | | | | |
|---|---|---|---|---|---|---|
| Crop | Base Acres | PLC Payment 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | 100 | $ - | $ - | | | |
| Wheat_Winter | 100 | $ 565 | $ 629 | | | |
| Totals | | $ 565 | $ 629 | $ - | $ - | $ - |

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- Scenario 1
  - Low than Average Yields
  - Higher than expected prices (2020)

| Enter Projected County-Level Crop Yields | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | bu/ac | 75 | 75 | | | |
| Wheat_Winter | bu/ac | 30 | 30 | | | |

| Enter Projected Crop Prices | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | $/bu | 3.81 | 4.00 | | | |
| Wheat_Winter | $/bu | 5.31 | 5.60 | | | |

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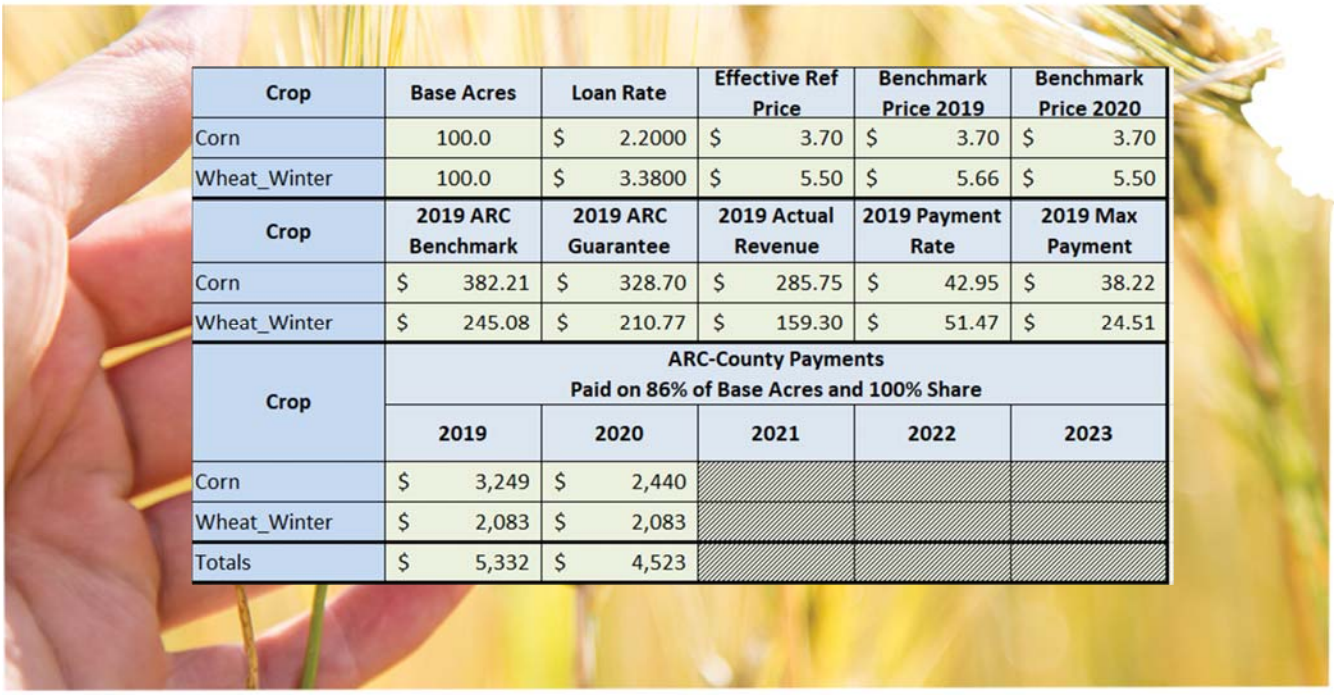

| Crop | Base Acres | Loan Rate | Effective Ref Price | Benchmark Price 2019 | Benchmark Price 2020 |
|---|---|---|---|---|---|
| Corn | 100.0 | $ 2.2000 | $ 3.70 | $ 3.70 | $ 3.70 |
| Wheat_Winter | 100.0 | $ 3.3800 | $ 5.50 | $ 5.66 | $ 5.50 |

| Crop | 2019 ARC Benchmark | 2019 ARC Guarantee | 2019 Actual Revenue | 2019 Payment Rate | 2019 Max Payment |
|---|---|---|---|---|---|
| Corn | $ 382.21 | $ 328.70 | $ 285.75 | $ 42.95 | $ 38.22 |
| Wheat_Winter | $ 245.08 | $ 210.77 | $ 159.30 | $ 51.47 | $ 24.51 |

| Crop | ARC-County Payments Paid on 86% of Base Acres and 100% Share | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | $ 3,249 | $ 2,440 | | | |
| Wheat_Winter | $ 2,083 | $ 2,083 | | | |
| Totals | $ 5,332 | $ 4,523 | | | |

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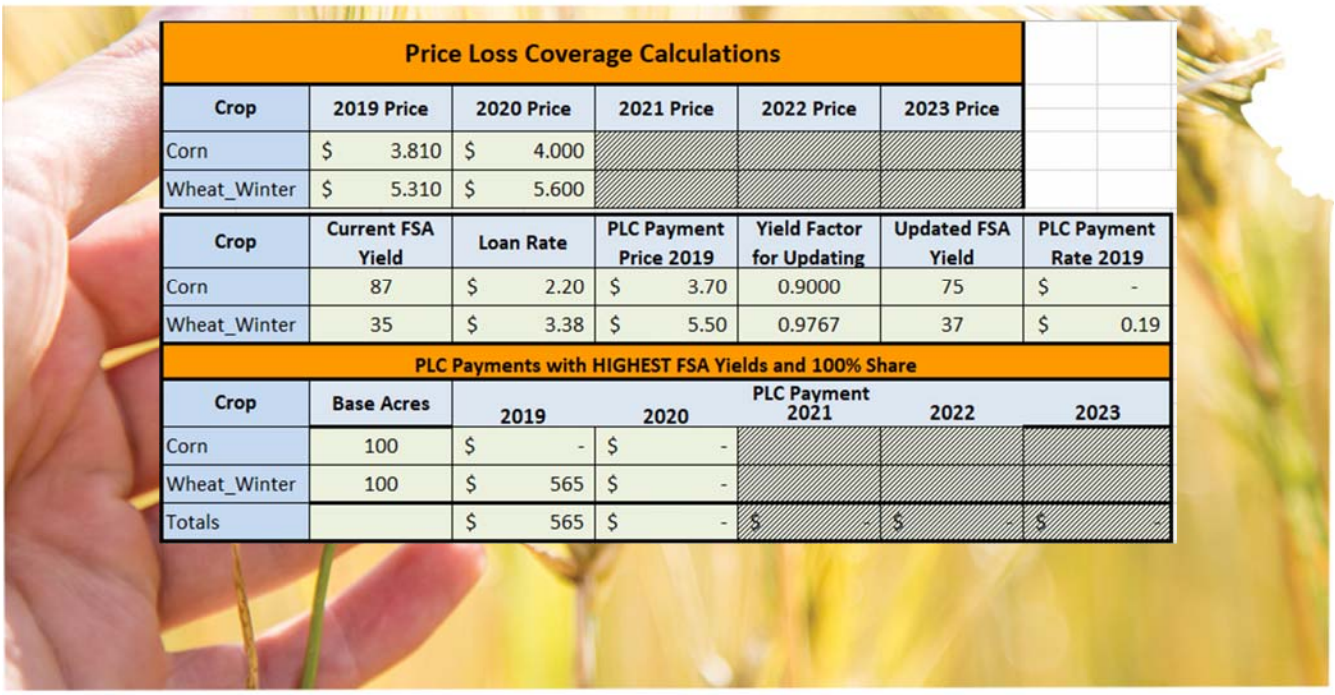

**Price Loss Coverage Calculations**

| Crop | 2019 Price | 2020 Price | 2021 Price | 2022 Price | 2023 Price |
|---|---|---|---|---|---|
| Corn | $ 3.810 | $ 4.000 | | | |
| Wheat_Winter | $ 5.310 | $ 5.600 | | | |

| Crop | Current FSA Yield | Loan Rate | PLC Payment Price 2019 | Yield Factor for Updating | Updated FSA Yield | PLC Payment Rate 2019 |
|---|---|---|---|---|---|---|
| Corn | 87 | $ 2.20 | $ 3.70 | 0.9000 | 75 | $ - |
| Wheat_Winter | 35 | $ 3.38 | $ 5.50 | 0.9767 | 37 | $ 0.19 |

**PLC Payments with HIGHEST FSA Yields and 100% Share**

| Crop | Base Acres | PLC Payment 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| Corn | 100 | $ - | $ - | | | |
| Wheat_Winter | 100 | $ 565 | $ - | | | |
| Totals | | $ 565 | $ - | $ - | $ - | $ - |

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- Scenario 2
  - Higher than average yields
  - Lower than expected prices

| Enter Projected County-Level Crop Yields | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | bu/ac | 120 | 110 | | | |
| Wheat_Winter | bu/ac | 45 | 50 | | | |

| Enter Projected Crop Prices | | | | | | |
|---|---|---|---|---|---|---|
| Crop | units | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | $/bu | 3.55 | 3.40 | | | |
| Wheat_Winter | $/bu | 4.90 | 4.50 | | | |

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| Crop | Base Acres | Loan Rate | Effective Ref Price | Benchmark Price 2019 | Benchmark Price 2020 |
|---|---|---|---|---|---|
| Corn | 100.0 | $ 2.2000 | $ 3.70 | $ 3.70 | $ 3.70 |
| Wheat_Winter | 100.0 | $ 3.3800 | $ 5.50 | $ 5.66 | $ 5.50 |

| Crop | 2019 ARC Benchmark | 2019 ARC Guarantee | 2019 Actual Revenue | 2019 Payment Rate | 2019 Max Payment |
|---|---|---|---|---|---|
| Corn | $ 382.21 | $ 328.70 | $ 426.00 | $ - | $ 38.22 |
| Wheat_Winter | $ 245.08 | $ 210.77 | $ 220.50 | $ - | $ 24.51 |

| Crop | ARC-County Payments Paid on 86% of Base Acres and 100% Share | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | $ - | $ - | | | |
| Wheat_Winter | $ - | $ - | | | |
| Totals | $ - | $ - | | | |

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| Price Loss Coverage Calculations | | | | | |
|---|---|---|---|---|---|
| Crop | 2019 Price | 2020 Price | 2021 Price | 2022 Price | 2023 Price |
| Corn | $ 3.550 | $ 3.400 | | | |
| Wheat_Winter | $ 4.900 | $ 4.500 | | | |

| Crop | Current FSA Yield | Loan Rate | PLC Payment Price 2019 | Yield Factor for Updating | Updated FSA Yield | PLC Payment Rate 2019 |
|---|---|---|---|---|---|---|
| Corn | 87 | $ 2.20 | $ 3.70 | 0.9000 | 75 | $ 0.15 |
| Wheat_Winter | 35 | $ 3.38 | $ 5.50 | 0.9767 | 37 | $ 0.60 |

| PLC Payments with HIGHEST FSA Yields and 100% Share | | | | | | |
|---|---|---|---|---|---|---|
| Crop | Base Acres | PLC Payment 2019 | 2020 | 2021 | 2022 | 2023 |
| Corn | 100 | $ 1,109 | $ 2,219 | | | |
| Wheat_Winter | 100 | $ 1,785 | $ 3,145 | | | |
| Totals | | $ 2,894 | $ 5,364 | $ - | $ - | $ - |

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# What to choose?

- **Best fit for your farm will depend on your preferences for risk management**
  - Protection against catastrophic price declines (PLC)
  - Protection against shallow revenue losses (ARC)

**Or….**

- **Highest program payments**
  - Look at best information available, educated guess/gamble

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# THANK YOU!

THE KSU Farm Bill Team:

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