



# ARC/PLC Policy and Payment Updates



Sponsored by



**Gary Schnitkey**



**Jonathan Coppess**



**Nick Paulson**



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## Questions

Please submit questions  
during the presentation

ARC/PLC Policy and Payment Updates  
by Gary Schnitkey, Jonathan Coppess, and Nick Paulson  
September 27, 2019

**Housekeeping**  
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**Questions**  
Please submit questions during the presentation

**TOPICS**  
• ARC/PLC  
• Other programs  
• MFP  
• WHP PLUS

**Agriculture Risk Coverage & Price Loss Coverage**

**Farm Bill 2018: Commodity Title**  
• Schnitkey, G., C. Zulauf, K. Swanson, J. Coppess and N. Paulson  
"The Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) Programs in the 2018 Farm Bill"  
Journal of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, September 24, 2018  
[www.farmdoc.illinois.edu](http://www.farmdoc.illinois.edu)  
[Screenshot of the Farm Bill 2018 Commodity Title slide]

**Farm Bill 2018: Commodity Title**  
• On a PSA farmstead, choose a choice between:  
• Agricultural Risk Coverage (ARC)  
• Price Loss Coverage (PLC)  
• For 2014 Farm Bill, the choice is a choice of ARC, PLC or a combination of ARC and PLC.  
• For 2014 Farm Bill, the choice is a choice of ARC, PLC or a combination of ARC and PLC.  
• Choose will initially be made for 2019 and 2020  
• Make a yearly choice after that:  
2020, 2021, 2022


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ILLINOIS FARM BUREAU Farm. Family. Food.

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# TOPICS

- ARC/PLC
- Other programs
  - MFP
  - WHIP PLUS

 FarmDoc

### Welcome to the Gardner Program Payment Calculator

The Gardner Program Payment Calculator provides farmers, researchers and policymakers with a web-based analysis tool for farm program payments. The Payment Calculator will help improve the understanding of farm programs authorized by Congress in the Agricultural Improvement Act of 2018 (the farm bill), as well assist farmers with program decisions. The initial version of this tool will generate estimated program payments for individual farms from the Agriculture Risk Coverage, County (ARC-CO) and the Price Loss Coverage (PLC) farm programs in a web-based dashboard using county level historical data and modeled price and yield forecasts

Funding for this project has been provided by the Gardner Agriculture Policy Program and by a cooperative agreement with the Office of the Chief Economist at the U.S. Department of Agriculture; it is operated in conjunction with the farmdoc project in the Dept. of Agricultural & Consumer Economics (ACE) and powered by the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign.

#### How does the simulation work?

State  
Illinois

County  
Champaign

Crop  
Corn

Forecast Model  
Forecast

PLC Payment Yield \*  
105 bushels/acre

ARC Trend Yield \*  
1.73 bushels/acre

ARC/PLC Program Inputs

ARC Coverage Level	86 %
ARC Coverage Range	10 %
Payment Acres	85 %

> RUN MODEL

Reference Price  
\$ 3.7




Creating an account allows you to save the simulation data and information about your farm and fields.


Don't have an account?

TRY IT OUT!

Create Account (Coming Soon)

v1.0.0 alpha





An aerial photograph of a vast agricultural landscape under a dramatic, cloudy sky. The majority of the fields are dark brown, indicating they are flooded. Scattered throughout the landscape are numerous irregular, light-colored patches of water. A small, isolated farmstead with a white house and a blue outbuilding is situated in the center-left of the frame, surrounded by a small green lawn and trees. A straight road or path runs diagonally across the middle of the image, and a dirt road or railway track runs along the bottom right. The overall scene conveys a sense of significant environmental risk to agriculture.

# Agriculture Risk Coverage & Price Loss Coverage



# Farm Bill 2018: Commodity Title

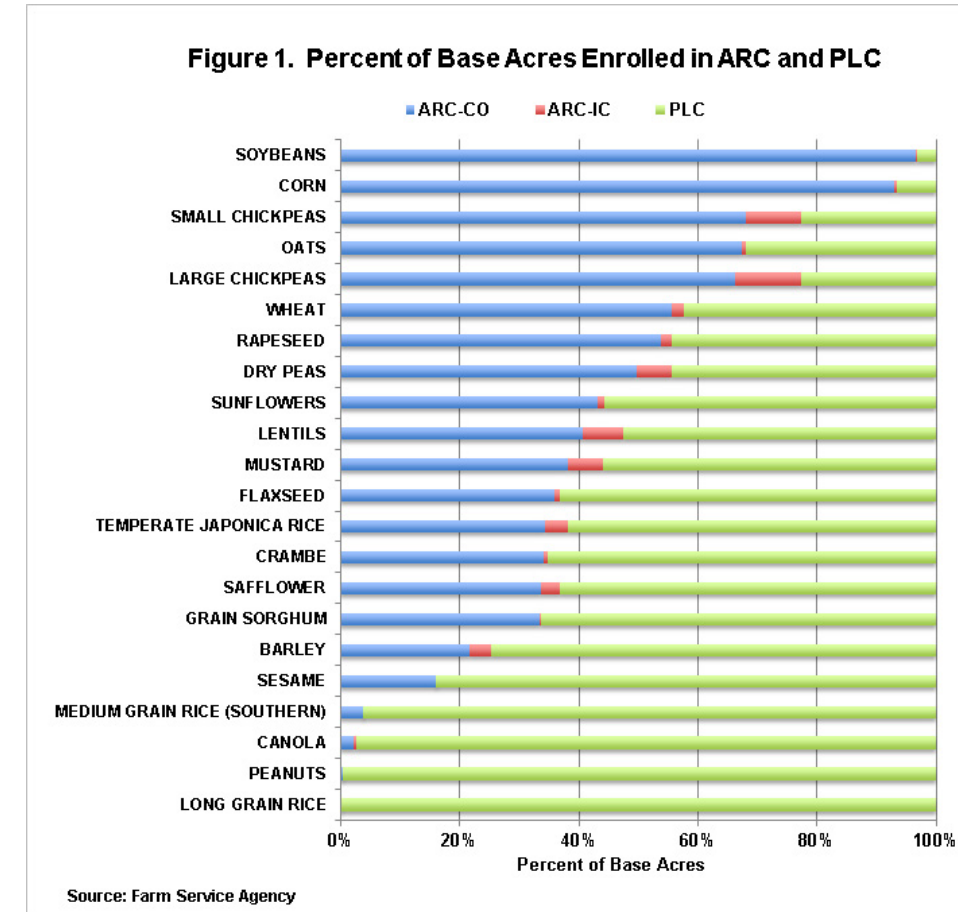
- Schnitkey, G., C. Zulauf, K. Swanson, J. Coppess and N. Paulson.  
**"The Price Loss Coverage (PLC) Option in the 2018 Farm Bill"** *farmdoc daily* (9):178,  
Department of Agricultural and Consumer Economics,  
University of Illinois at Urbana-Champaign, September 24, 2019  
<https://farmdocdaily.illinois.edu/2019/09/weekly-farm-economics-the-price-loss-coverage-plc-option-in-the-2018-farm-bill.html>
- Schnitkey, G., J. Coppess, N. Paulson, C. Zulauf and K. Swanson.  
**"The Agricultural Risk Coverage — County Level (ARC-CO) Option in the 2018 Farm Bill"**  
*farmdoc daily* (9):173, Department of Agricultural and Consumer Economics,  
University of Illinois at Urbana-Champaign, September 17, 2019  
<https://farmdocdaily.illinois.edu/2019/09/the-agricultural-risk-coverage-county-level-arc-co-option-in-the-2018-farm-bill.html>
- <https://fd-tools.ncsa.illinois.edu>  
(online payment estimate calculator).





# Farm Bill 2018: Commodity Title

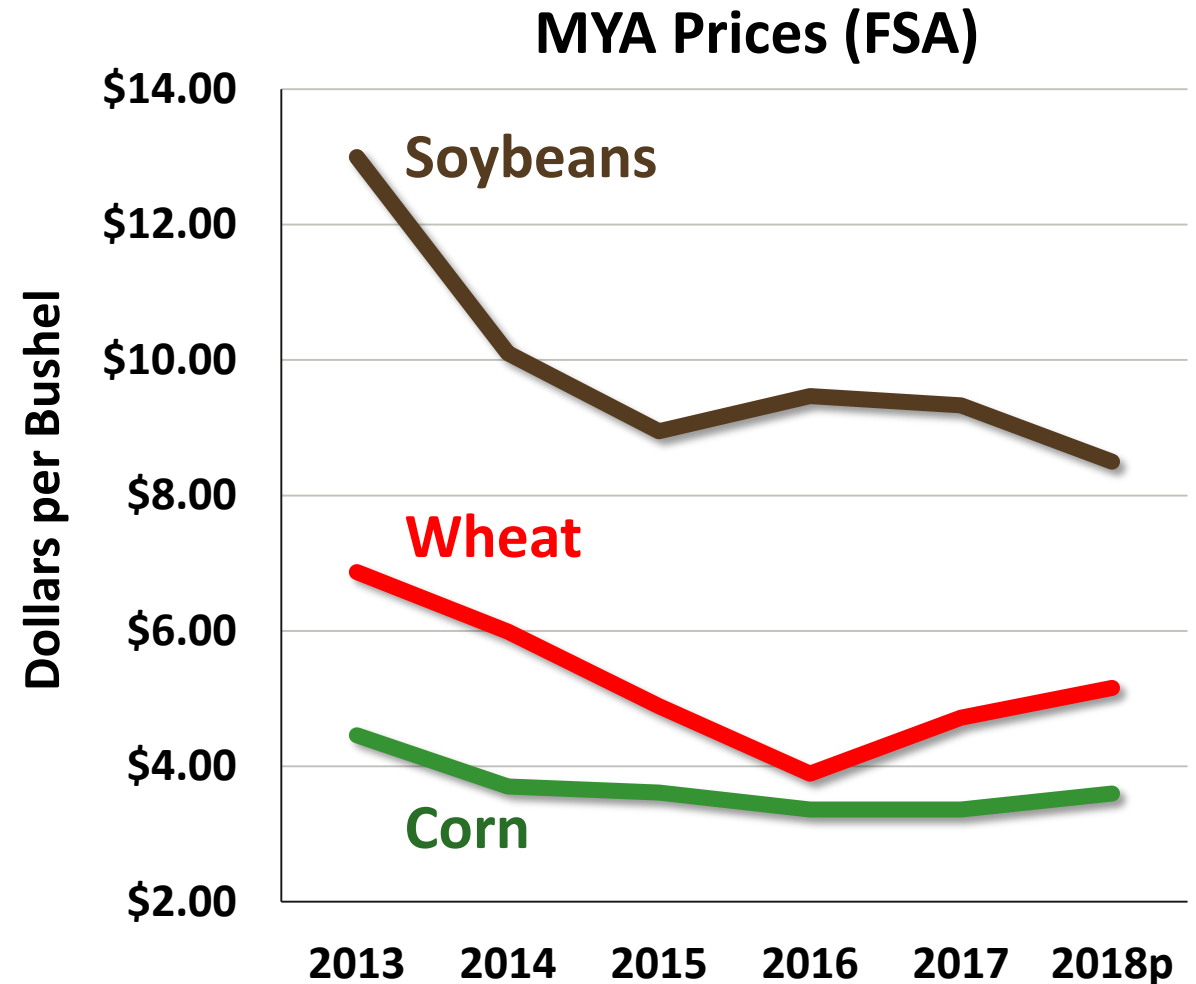
- On a FSA farm basis, allows a choice between:
  - Price Loss Coverage (PLC)
  - Agricultural Risk Coverage – County Level (ARC-CO)
  - ARC – Individual Coverage (ARC-IC)
- For 2014 Farm Bill likely made a choice of ARC-CO for corn and soybeans, don't assume this is the correct choice for 2018 Farm Bill
- Choice will initially be made for 2019 and 2020
- Make a yearly choice after that:  
2021, 2022, 2023





# Price Loss Coverage

- Makes payments when **market year average (MYA)** price (or loan rate) is below **effective reference** price
- MYA price is a national average price:
  - September to August for corn and soybeans
  - June to May for wheat





# Effective Reference Price

## Higher of

- 85% of 5-year Olympic moving average
- Statutory Reference price

Addition of 85% of 5-year Olympic average  
**not likely** to come into play

5-year Olympic average must be **above**

- \$4.35 for corn
- \$9.88 for soybeans
- \$6.47 for wheat

Statutory Reference Prices	
Corn	\$3.70
Soybeans	\$8.40
Wheat	\$5.50

# 85% of 5-Year Olympic Moving Average Prices and Statutory Reference Prices (SRP)

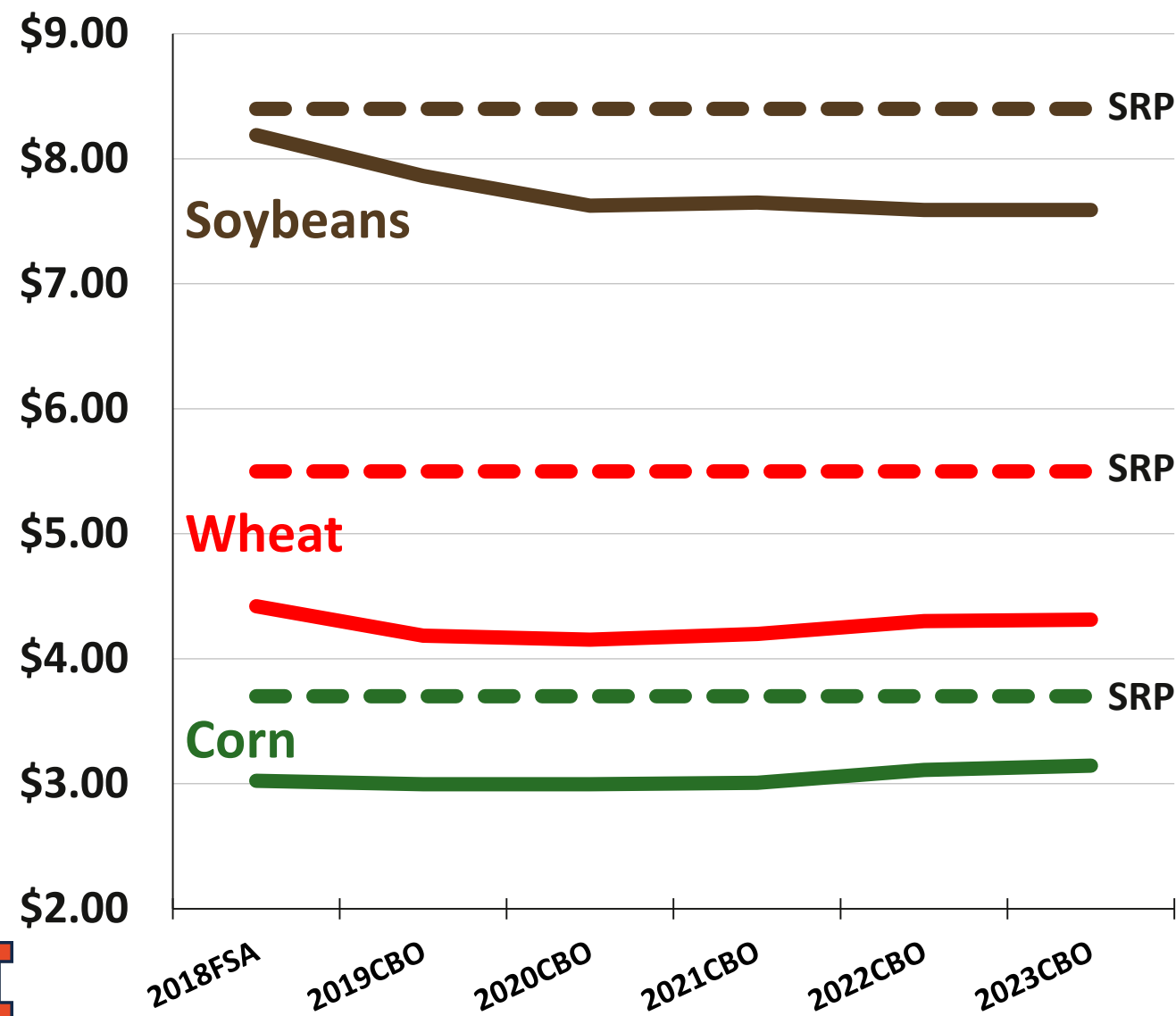


Table 1. Loan Rates and Reference Prices by Crop Under the 2018 Farm Bill.

Crop	Unit	National Loan Rate	Statutory Reference Price	Ref Price Divided by 85% <sup>1</sup>	Maximum Effective Ref Price <sup>2</sup>
Corn	Bushel	2.20	3.70	4.35	4.26
Soybeans	Bushel	6.20	8.40	9.88	9.66
Wheat	Bushel	3.38	5.50	6.47	6.33
Barley 1/	Bushel	2.50	4.95	5.82	5.69
Chickpeas, Large	Cwt.	14.00	21.54	25.34	24.77
Chickpeas, Small	Cwt.	10.00	19.04	22.40	21.90
Dry Peas	Cwt.	6.15	11.00	12.94	12.65
Grain Sorghum	Bushel	2.20	3.95	4.65	4.54
Lentils	Cwt.	13.00	19.97	23.49	22.97
Oats	Bushel	2.00	2.40	2.82	2.76
Canola	Cwt.	10.09	20.15	23.71	23.17
Crambe	Cwt.	10.09	20.15	23.71	23.17
Flaxseed	Bushel	10.09	11.28	13.27	12.97
Mustard	Cwt.	10.09	20.15	23.71	23.17
Rapeseed	Cwt.	10.09	20.15	23.71	23.17
Safflower	Cwt.	10.09	20.15	23.71	23.17
Sesame Seed	Cwt.	10.09	20.15	23.71	23.17
Sunflower	Cwt.	10.09	20.15	23.71	23.17
Peanuts	Ton	355.00	535.00	629.41	615.25
Rice, Long Grain	Cwt.	7.00	14.00	16.47	16.10
Rice, Medium/Short Grain	Cwt.	7.00	14.00	16.47	16.10
Rice, Temperate Japonica	Cwt.	7.00	16.10	18.94	18.52
Seed Cotton	Pound	.45-.52	0.367	0.430	0.42

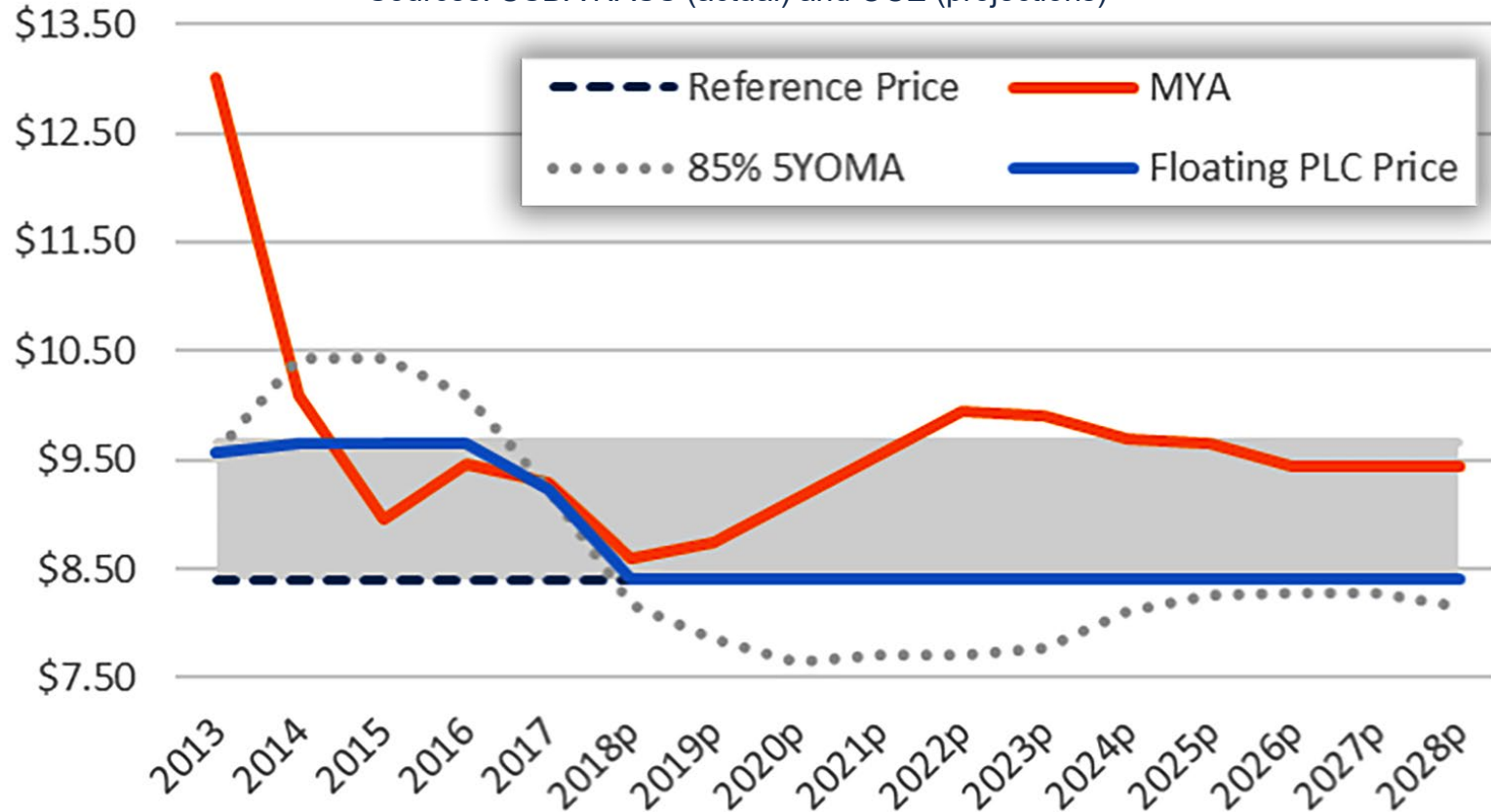
<sup>1</sup> The five-year Olympic average must exceed this value before the effective reference price is higher than the statutory reference price



# 2018 Farm Bill: Reference Price

## Soybean Floating Reference Price Example

Sources: USDA NASS (actual) and OCE (projections)



- USDA Chief Economist Forecast – likely too high
- MYA expected above \$8.40 Reference Price
- Effective reference price “escalator” (85% of 5 year Olympic moving average) not effective

# Yield Update for PLC

- Update yields on a crop and farm basis
- Higher of:
  - Current PLC yield, or
  - 2013 to 2017 average x  $.9 \times$  national yield ratio  
 $.81$  for corn, soybeans  
and wheat (most likely)  
Update if that yield is higher  
*(My advice: Use crop insurance yields)*

Table 3. Percentages of  
2013-2017 Average  
to Arrive at Update Yield.

Crop	Factor
Corn	0.8100
Soybeans	0.8100
Wheat	0.8591
Barley	0.8493
Canola	0.8679
Chickpeas_Large	0.9000
Chickpeas_Small	0.8784
Crambe	0.9000
Dry Peas	0.8989
Flaxseed	0.9000
Grain Sorghum	0.8169
Lentils	0.9000
Mustard	0.8514
Oats	0.8572
Peanuts	0.8346
Rapeseed	0.9000
Rice_Long Grain	0.8397
Rice_Med/Short Grain	0.8898
Rice_Temperate Japonica	0.8632
Safflower	0.9000
Seed Cotton	0.8100
Sesame	0.8706
Sunflower	0.8456



**Table 4. Calculation of Update Yield for 2018 PLC Program,  
Corn in Champaign County, Illinois**

Year	Farm Yield	Plug Yield <sup>1</sup>	Max of Farm or Plugged Yield
2013	168.1	158.05	168.1
2014	216.5	158.05	216.5
2015	189.4	158.05	189.4
2016	210.2	158.05	210.2
2017	206.8	158.05	206.8
<b>Average</b>			<b>198.2</b>
<b>Update Yield<sup>2</sup></b>			<b>160.5</b>

<sup>1</sup> Plug yields are specific to a county and crop.

<sup>2</sup> Update yield is a percentage of average 2013-2017 yields. Percentages vary by crop and are shown in Table 3.

**If update yield (160.5) is  
higher than current PLC  
yield, take the update.**

# Changes to ARC-CO, part 1.

**County Location:** The 2018 Farm Bill makes payments on the county where the farm is located.

**RMA Yields:** Yields from crop insurance will be given preference in the calculation of county yields in the 2018 Farm Bill. For the 2014 Farm Bill, National Agricultural Statistical Service (NASS) data were given first preference

**80% of t-yield:** For 2018, 80% of the t-yield is yield as the floor on county yields. For 2014, 70% of the t-yield was the plug yield.

**Trend-Adjusted Yields:** For 2018, county yields are trend adjusted before calculating benchmark yield. The trend adjustment was not used in 2014 Farm Bill.





# Changes to ARC-CO, part 2.

**Effective Reference Price:** For 2018, there is an effective reference price that can be higher than the reference price if 85% of the five-year Olympic average is above the reference price. The 2014 ARC-CO program did not have this escalator provision.

**Lagged Calculation:** For the 2018 Farm Bill, benchmark yields and prices used in calculating benchmark yields, prices, and revenues are lagged one year. The 2014 Farm Bill did not lag data.

**Multiple Decision Points:** For the 2018 Farm Bill, the choice between commodity title programs is not binding over the life of the 2018 Farm Bill. By March 15th, 2020, farmers and land owners will choose for the 2019 and 2020 program years.

**Multiple Decision Points:** A yearly decision then can be made for 2021, 2022, and 2023. For the 2014 Farm Bill, the commodity title choice was made for all program years from 2014 to 2018.

# ARC-CO: Benchmark Calculations

**Table 1. Calculation of Benchmark Yield for Agricultural Risk Coverage at County Level (ARC-CO),  
Non-Irrigated Corn in Champaign County in 2019.**

Year	County Yield <sup>1</sup> Bu/acre	80% of T-yield Bu/acre	Higher of Actual or 80% of T-Yield <sup>2</sup> Bu/acre	Number of Trend Years	Trend Yield Adjustment <sup>4</sup> Bu/acre	Trend Adjusted ARC-CO Yield <sup>5</sup> Bu/acre
2013	183.4	140.8	183.4	6.0	10.3	193.7
2014	227.7	140.8	227.7	5.0	8.6	236.3
2015	205.0	140.8	205.0	4.0	6.8	211.8
2016	223.9	140.8	223.9	3.0	5.1	229.0
2017	214.2	145.6	214.2	2.0	3.4	217.6
<b>Benchmark Yield<sup>6</sup></b>						<b>219.5</b>

<sup>1</sup> County yields are from crop insurance data from the Risk Management Agency.

<sup>2</sup> The higher of actual county yield or 80% of T-yield.

<sup>3</sup> The higher of the reference price of 85% of the five-year moving average of yields.

<sup>4</sup> The trend yield for corn in Champaign County is 1.71. This value is multiplied by the number of trend years.

<sup>5</sup> Equals the higher of Actual or 80% of T-yield plus the yearly trend adjustment.

<sup>6</sup> Olympic average of 2013 to 2017 trend adjusted ARC-CO yields. An Olympic average eliminates the high and low values, and then averages the remaining values.



From: farmdoc Daily, Sept 17, 2019

<https://farmdocdaily.illinois.edu/2019/09/the-agricultural-risk-coverage-county-level-arc-co-option-in-the-2018-farm-bill.html>



# ARC-CO: Benchmark Calculations

**Table 2. Calculation of Benchmark Price, Corn, 2019 (\$/bu)**

Year	MYA Price <sup>1</sup>	Effective Reference Price <sup>2</sup>	Used in Benchmark <sup>3</sup>
2013	\$4.46	\$3.70	\$4.46
2014	\$3.70	\$3.70	\$3.70
2015	\$3.61	\$3.70	\$3.70
2016	\$3.36	\$3.70	\$3.70
2017	\$3.36	\$3.70	\$3.70
Benchmark Price <sup>4</sup>			\$3.70

<sup>1</sup> Market Year Average (MYA) price

<sup>2</sup> Higher of reference price or 85% of Olympic moving average price.

<sup>3</sup> Higher of MYA price or effective reference price.

<sup>4</sup> Olympic average of 2013 to 2017 prices. An Olympic average eliminates the high and low values, and then averages the remaining values.



From: farmdoc Daily, Sept 17, 2019

<https://farmdocdaily.illinois.edu/2019/09/the-agricultural-risk-coverage-county-level-arc-co-option-in-the-2018-farm-bill.html>

# ARC-CO

## Payment

## Calculations

**Table 3. Calculation of ARC-CO Guarantee  
for Non-irrigated Corn in Champaign County, Illinois, 2019.**

<b>Benchmark Yield (From Table 1)</b>	<b>219.50</b>
<b>Benchmark Price (from Table 2)</b>	<b>\$3.70</b>
<b>Benchmark Revenue</b> <b>(benchmark yield x benchmark price)</b>	<b>\$812.15</b>
<b>ARC-CO Guarantee</b> <b>(.86 x benchmark revenue)</b>	<b>\$698.45</b>



# ARC-CO Payment Calculations.

**Table 4. Calculation of ARC-CO Payment per Base Acre.**

	Per acre
<b>ARC-CO Guarantee (from Table 3)</b>	<b>\$698.45</b>
<b>2019 County Yield</b>	<b>190</b>
<b>2019 MYA Price</b>	<b>\$3.50</b>
<b>County Revenue (yield x price)</b>	<b>\$665.00</b>
<b>Maximum ARC-CO Payment Rate</b> (10% of benchmark revenue)	<b>\$81.22</b>
<b>Payment Rate</b> (Equals lower of max payment rate or guarantee - county revenue If guarantee < county revenue, the payment rate = 0.0)	<b>\$33.45</b>
<b>Payment per Base Acre</b> (.85 times payment rate)	<b>\$28.43</b>



From: farmdoc Daily, Sept 17, 2019

<https://farmdocdaily.illinois.edu/2019/09/the-agricultural-risk-coverage-county-level-arc-co-option-in-the-2018-farm-bill.html>



# Demonstrate ARC/PLC Tool

State  
Illinois

County  
Champaign

Crop  
Corn

Reference Price  
\$ 3.7

Forecast Model  
Forecast

PLC Payment Yield \*  
105 bushels/acre

ARC Trend Yield \*  
1.73 bushels/acre

**ARC/PLC Program Inputs**

ARC Coverage Level	86 %
ARC Coverage Range	10 %
Payment Acres	85 %

**RUN MODEL**

<https://go.illinois.edu/fd-ARCPLC>

State

Illinois

▼

i

County

LaSalle

▼

Crop

Corn

▼

Reference Price

\$ 3.7

Forecast Model

Forecast

▼

?

PLC Payment Yield \*

160

bushels/acre

i

ARC Trend Yield \*

2.03

bushels/acre

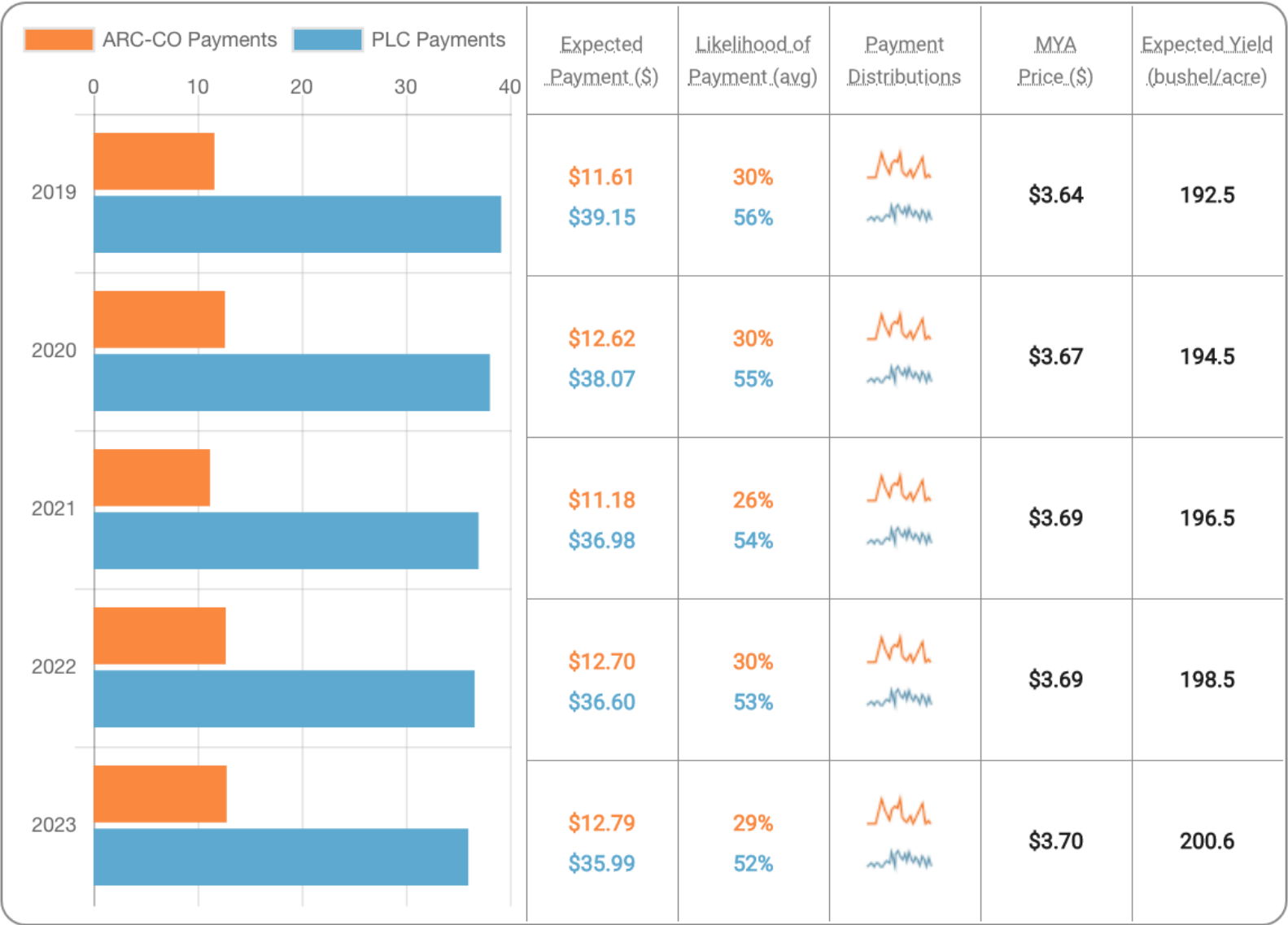
i

ARC/PLC Program Inputs

ARC Coverage Level	86 %
ARC Coverage Range	10 %
Payment Acres	85 %

➤

RUN MODEL



Tool that will be on *farmdoc*



State

Illinois

▼

i

County

LaSalle

▼

Crop

Soybean

▼

Reference Price

\$ 8.4

Forecast Model

Forecast

▼

?

PLC Payment Yield \*

55

bushels/acre

i

ARC Trend Yield \*

0.47

bushels/acre

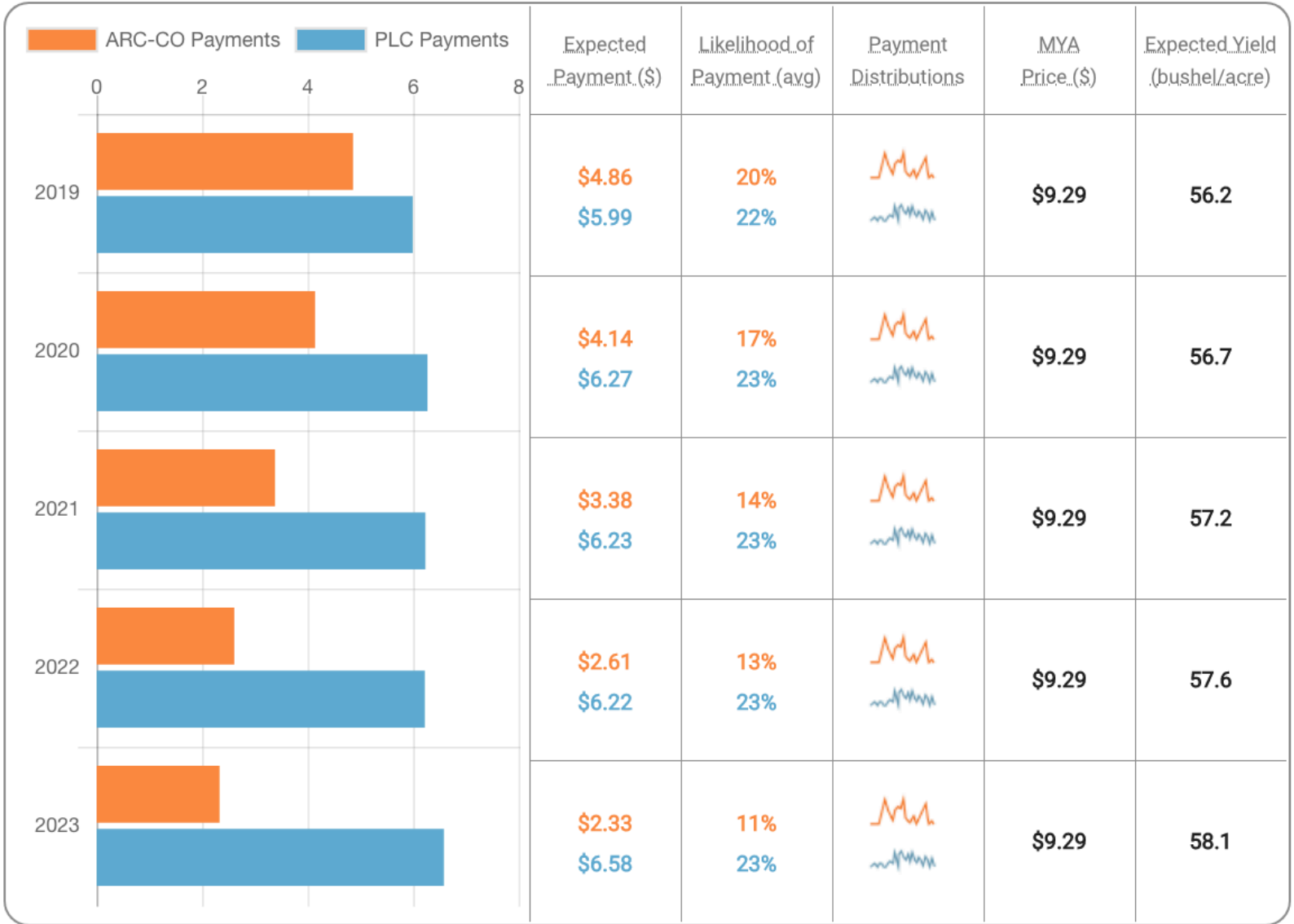
i

ARC/PLC Program Inputs

ARC Coverage Level	86 %
ARC Coverage Range	10 %
Payment Acres	85 %

➤

RUN MODEL



Tool that will be on *farmdoc*





# 2018 Farm Bill: Loan Rate Update

## 2018 Farm Bill Loan Rates

Loan Commodity	Current Loan Rate	2019 to 2023 Loan Rate	Percentage Increase
WHEAT (bu.)	\$2.94	\$3.38	114.97%
CORN (bu.)	\$1.95	\$2.20	112.82%
GRAIN SORGHUM (bu.)	\$1.95	\$2.20	112.82%
BARLEY (bu.)	\$1.95	\$2.20	112.82%
UPLAND COTTON (lb.)	2-year average of world prices (between \$0.45 and \$0.52/lb.)	2-year average of world prices, not less than 98% of previous year (between \$0.45 and \$0.52/lb)	
LONG GRAIN RICE (cwt.)	\$6.50	\$7.00	107.69%
MEDIUM GRAIN RICE (cwt.)	\$6.50	\$7.00	107.69%
SOYBEANS (bu.)	\$5.00	\$6.20	124.00%
PEANUTS (tons)	\$355	\$355	100.00%



# **Market Facilitation Program (MFP)**

## **Wildfire and Hurricane Indemnity Program (WHIP) Plus**





# Legislation providing payments to Illinois farmers in 2019

## MFP

### Market Facilitation Program

- Authorized through CCC authority
- Designed to cover losses from trade and other market distortions
- Never was envisioned to be such a large program, may face some scrutiny in the future
- Eligibility:
  1. Meet highly erodible land requirement
  2. Average AGI for 2015, 2016, 2017 is less than \$900,00 or more than 75% of AGI from farming
- \$250,000 per person (separate for milk and hogs, and specialty crops)

## WHIP Plus

### Wildfire and Hurricane Indemnity Program

- Disaster bill passed by U.S. Congress
  - Cover production losses in 2018, 2019
  - Programs
    - Prevent plant
    - WHIP for crop, tree nuts, milk losses (don't think this applies to Illinois because we did not have losses due to wildfires and hurricanes)
  - Payment limit of \$125,000 per entity, not applied to prevent plant
- (FSA does not have a manual)



# Reviewing MFP (2018 and 2019)

Expected spending for MFP will exceed all Title I program spending in FY2019 and 2020.

MFP2018: CBO projects \$9.556 billion.

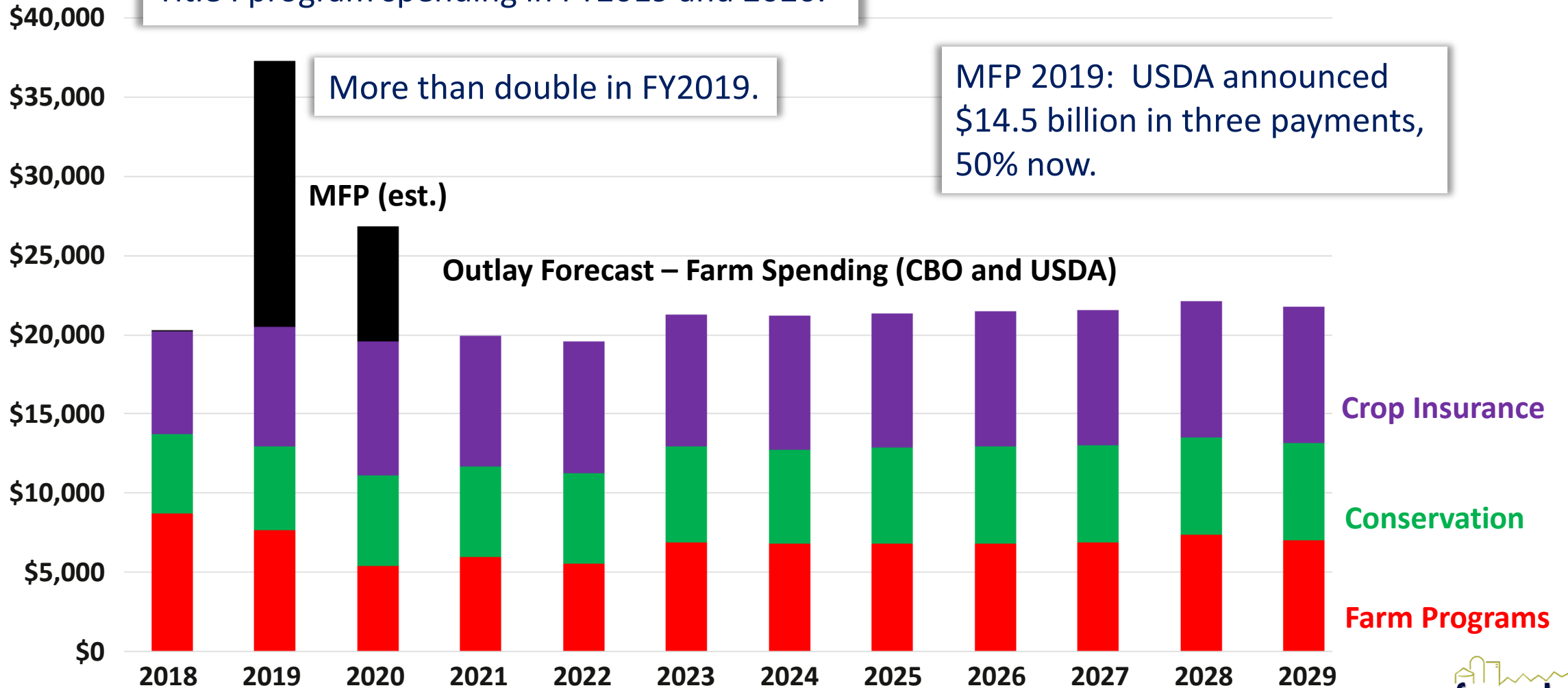
More than double in FY2019.

MFP 2019: USDA announced \$14.5 billion in three payments, 50% now.

Millions in Outlays

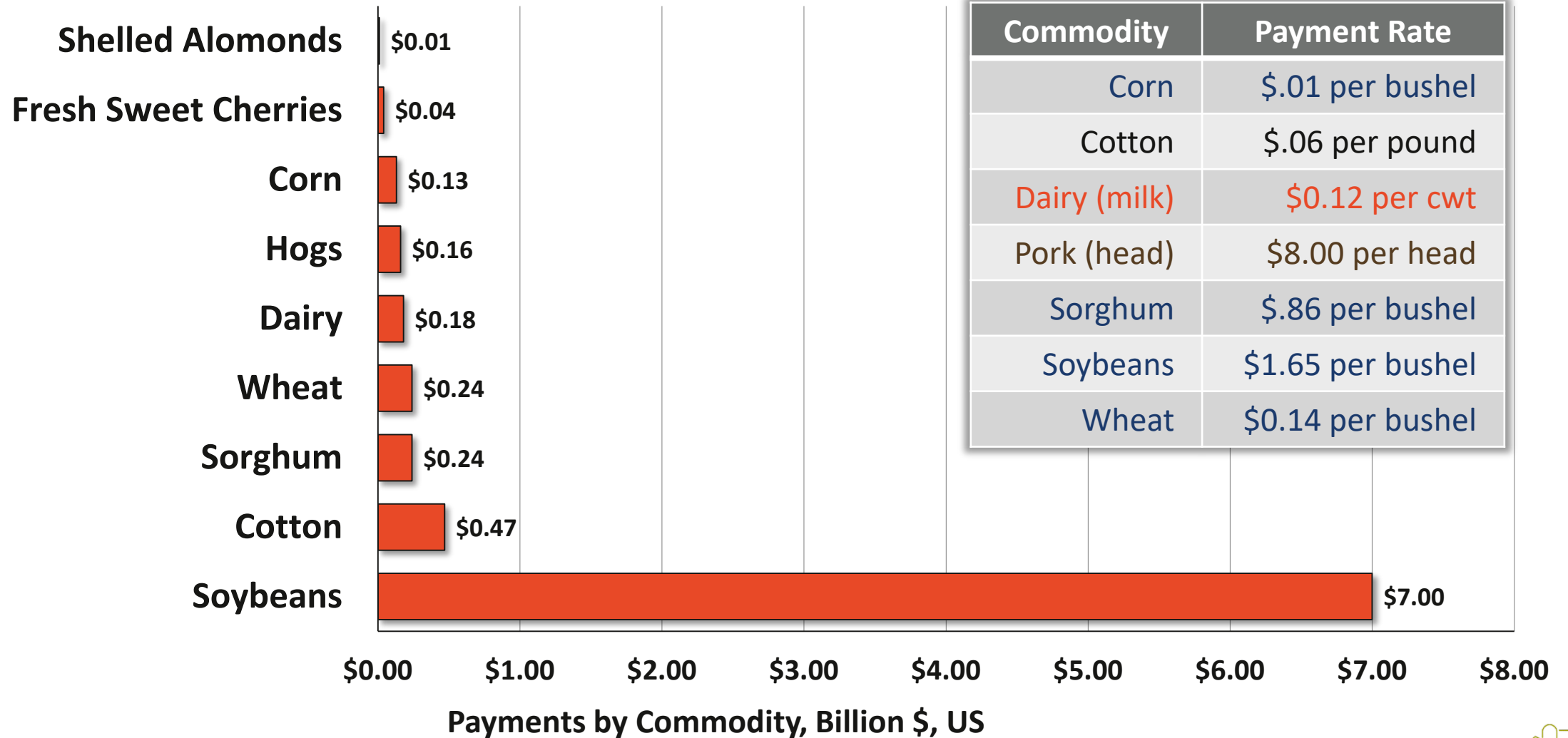
MFP (est.)

Outlay Forecast – Farm Spending (CBO and USDA)



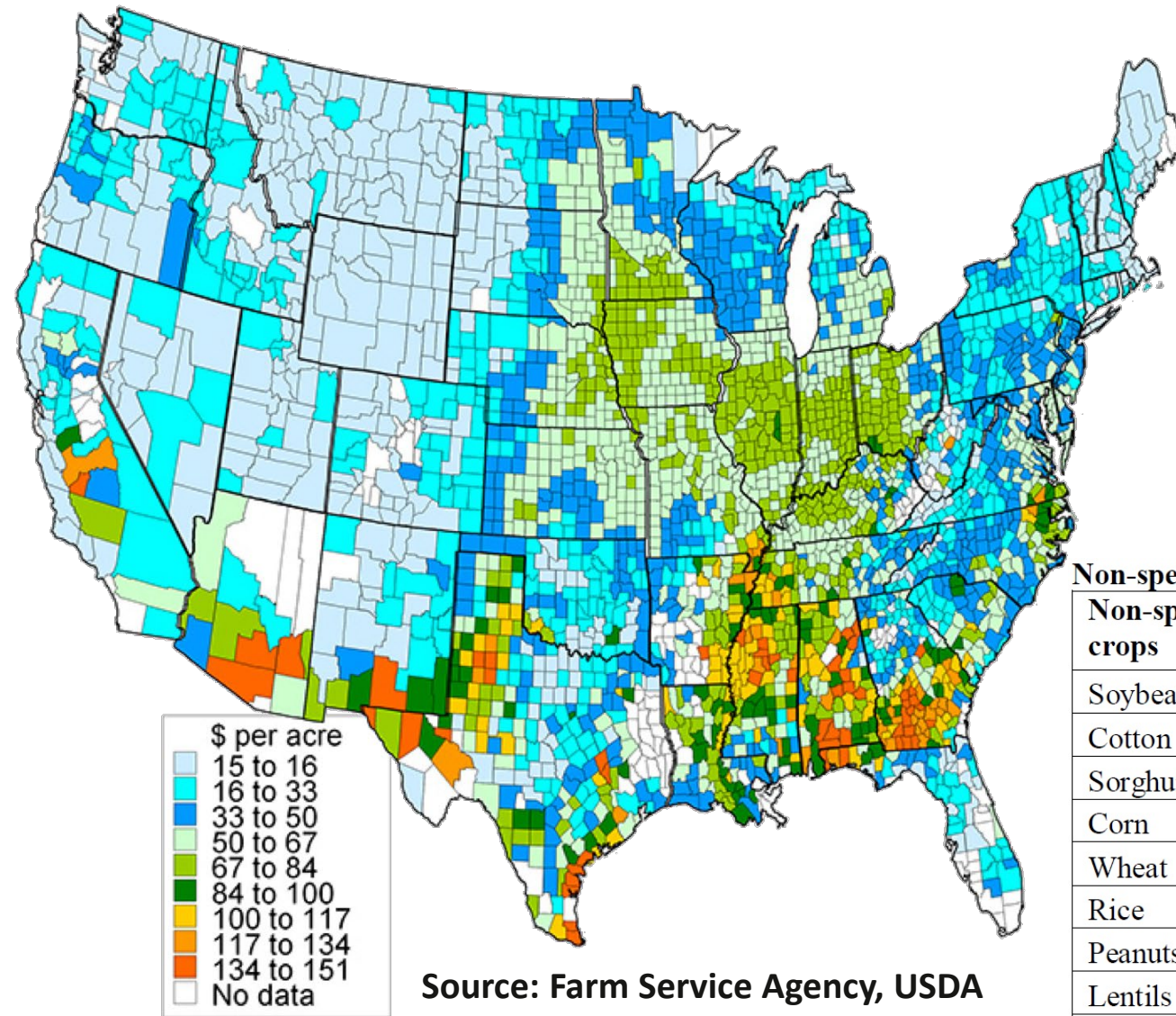
# MFP(2018)

## Market Facilitation Program (MFP) Version 1.0



# MFP2 (2019)

- Payment rates; single (per-acre) rate by county for all planted acres in 2019 (\$15 per acre for cover crop/prevent); range from \$15 per acre to \$150 per acre.
- Illinois range: \$50 (Jo Daviess) to \$85/acre (Moultrie).



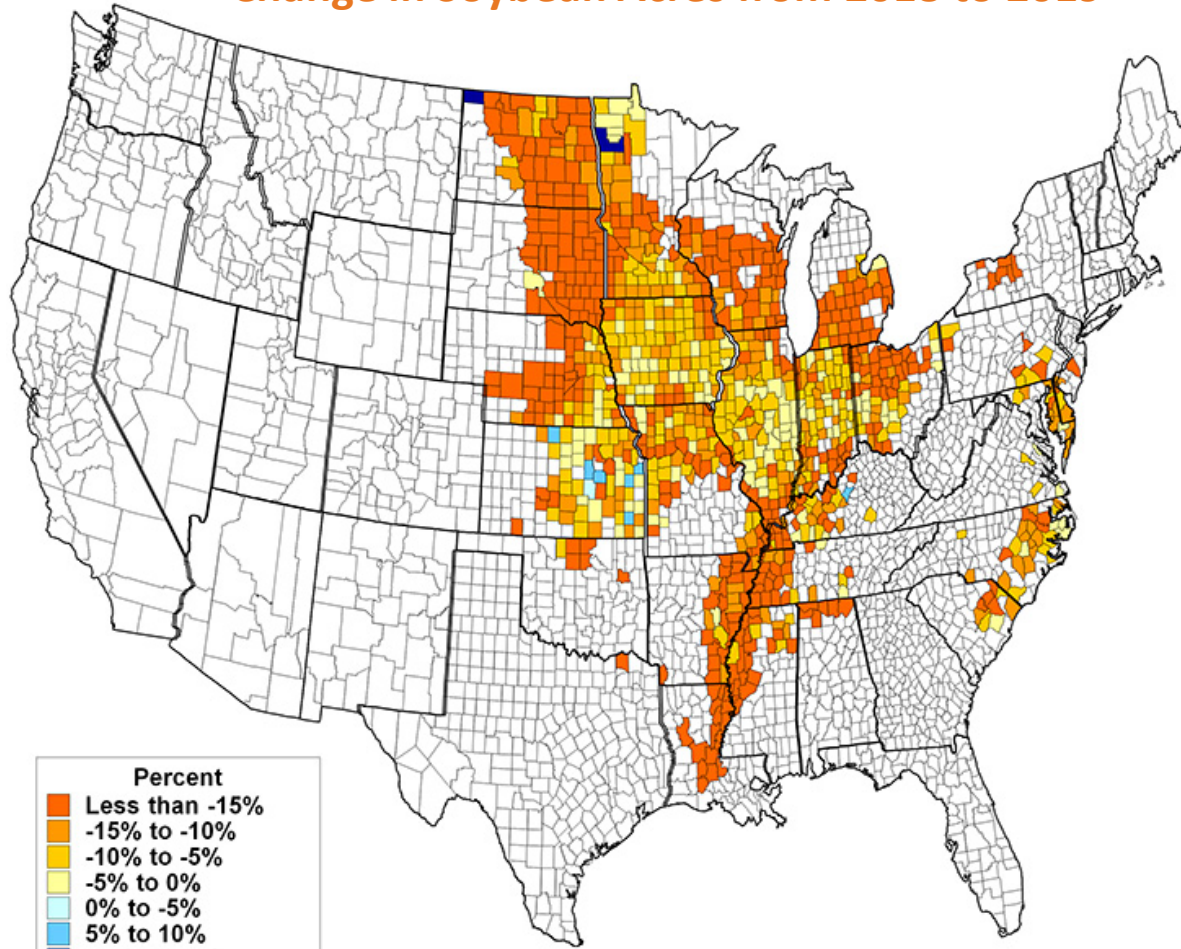
Non-specialty crops commodity rates

Non-specialty crops	Commodity Rate	Units
Soybeans	\$2.05	BU
Cotton	\$0.26	LB
Sorghum	\$1.69	BU
Corn	\$0.14	BU
Wheat	\$0.41	BU
Rice	\$0.63	CWT
Peanuts	\$0.01	LB
Lentils	\$3.99	CWT
Peas	\$0.85	CWT
Alfalfa Hay	\$2.81	TONS
Dried Beans	\$8.22	CWT
Chickpeas	\$1.48	CWT



# WHIP PLUS: Prevent Plant Supplemental.

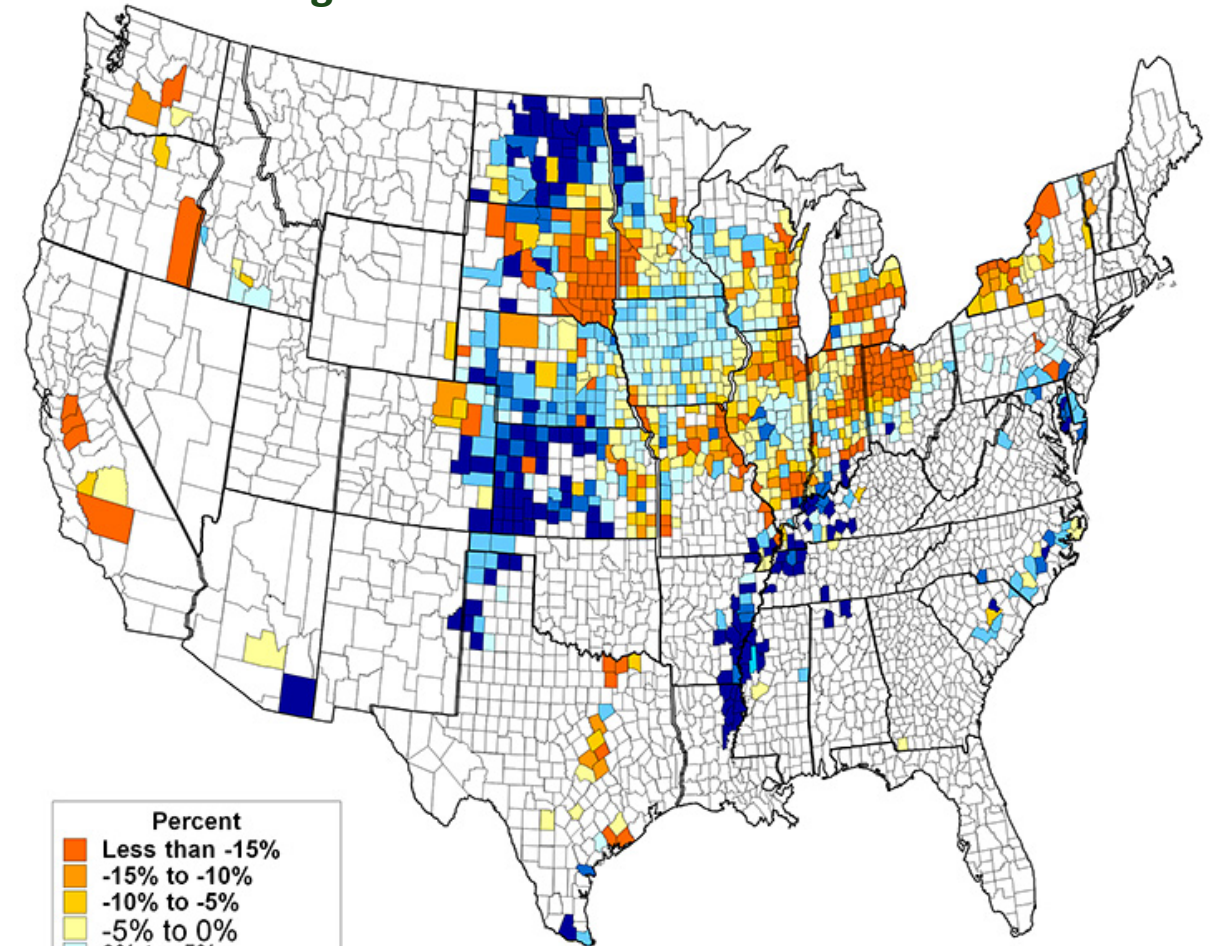
Change in Soybean Acres from 2018 to 2019



Source: Farm Service Agency



Change in Corn Acres from 2018 to 2019



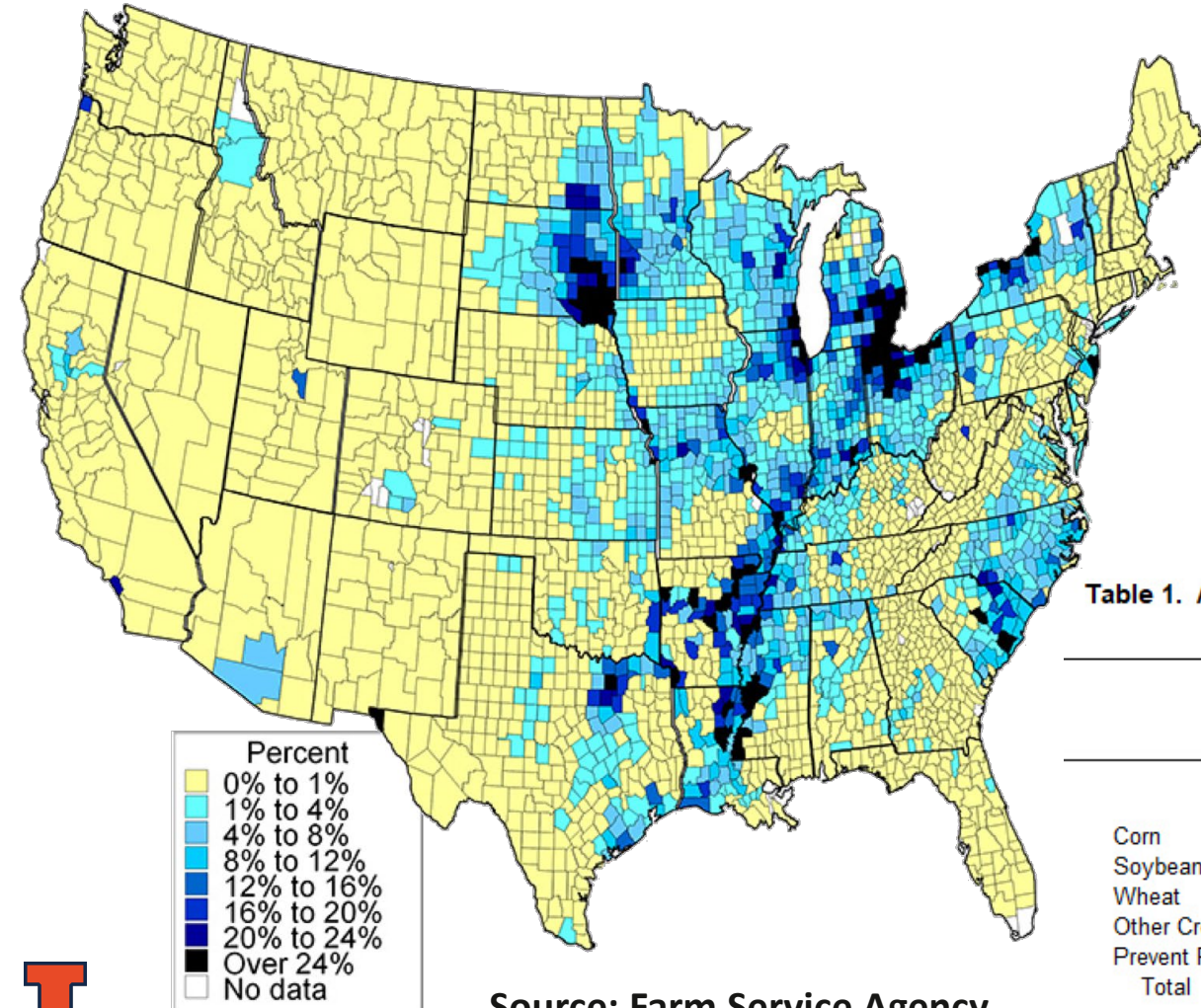
Source: Farm Service Agency





# WHIP PLUS: Prevent Plant Supplemental.

## Prevent Plant Acres as a Percent of 2019 Total Acres



Source: Farm Service Agency

- USDA announced that farmers with prevent plant on revenue policies will receive a supplemental indemnity equal: 15% on RP, 10% on other policies
- We estimate between \$500m to \$725m of the \$3b available will be paid out under this provision.
- **Example:** 85% revenue, corn (200 APH; \$4.00 projected price); PP at 55% = \$374 est. indemnity.
- Supplemental = 15% of \$374 = \$56.10

Table 1. Acres of Crops and Prevent Planting in 2018 and 2019, Farm Service Agency

	2018 <sup>1</sup>	2019 <sup>2</sup>	Percent Change <sup>3</sup>
	acres	acres	
Corn	86,398,000	85,871,000	-1%
Soybeans	87,965,000	74,005,000	-16%
Wheat	44,954,000	46,302,000	3%
Other Crops	28,177,000	26,960,000	-4%
Prevent Plant	1,892,000	19,259,000	918%
Total	249,386,000	252,397,000	1%

<sup>1</sup> 2018 acreage data as of January 28, 2019

<sup>2</sup> 2019 acreage data as of August 1, 2019

<sup>3</sup> Change in 2019 acreage from 2018 acreage.

Source: USDA, Farm Service Agency

# WHIP Crop

## WHIP payment factors

Coverage Level	WHIP+ Payment Factor (percent)
No crop insurance or No NAP coverage.....	70
Catastrophic coverage.....	75
More than catastrophic coverage but less than 55 percent .....	77.5
At least 55 percent but less than 60 percent.....	80
At least 60 percent but less than 65 percent.....	82.5
At least 65 percent but less than 70 percent.....	85
At least 70 percent but less than 75 percent.....	87.5
At least 75 percent but less than 80 percent.....	92.5
At least 80 percent .....	95

## Payment formula

Expected value crop

x whip payment factor

- Value of crop

- insurance indemnity

We think does not apply to Illinois

# FSA Loan Program

- Direct loans
  - Can move this year's payment to end of loan, with reason
  - Interest is still owed
  - Only allowed once during the life of the loan
- Guaranteed loans
  - Can be restructured
- Disaster loans are available





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