

# ARC-PLC Decision Tool

Farm Bill Training Sessions 2019

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# ARC-PLC Decision Tool

- Can be found at <https://www.agecon.msstate.edu/>
- Under Budgets Tab
- Farm Bill Decision Tool section



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# ARC-PLC Decision Tool Walkthrough

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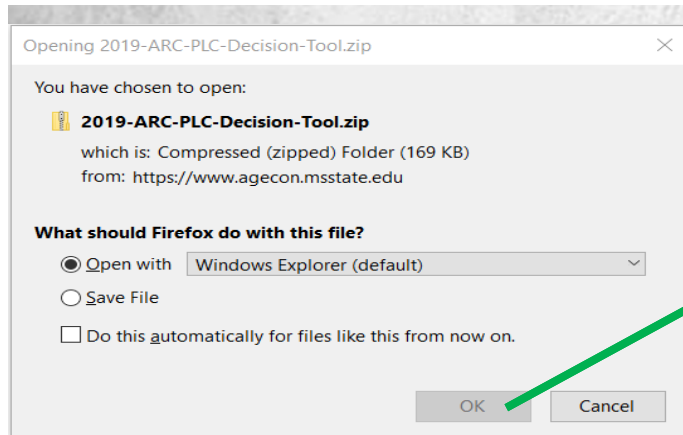
# ARC-PLC Decision Tool Walkthrough

Under Budget Tab scroll down

## Farm Bill Decision Tools

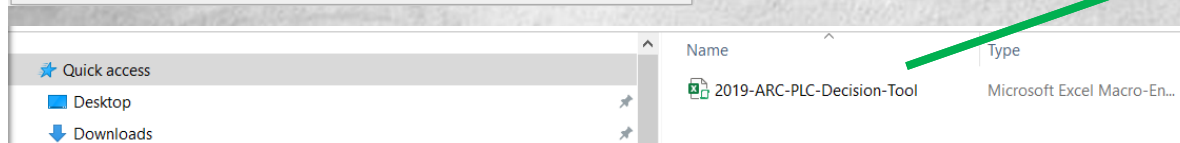
2019 ARC and PLC Decision Tool

Select the 2019 ARC and PLC Decision Tool



Select OK

Select Excel file



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# ARC-PLC Decision Tool Walkthrough

The Home sheet contains a Table of Contents and Contact Information

**2019 ARC and PLC Decision Tool**

This excel workbook contains decision tools for determining expected payments from the ARC-CO and PLC programs for 2019. The user estimation tool allows the user to select their county and input their own estimates for yields and prices. The tool will use these estimates to calculate expected ARC-CO and PLC payment rates per base acre for select commodities. This workbook also contains more detailed sheets for each commodity and program. The default values in these sheets are estimates of 2019 prices and yields based on the best available data.

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# ARC-PLC Decision Tool Walkthrough

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Will take you to an  
individual sheet for  
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For example, select the Soybean link under ARC-CO



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# ARC Walkthrough

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1								Program Year 2019 Benchmark Yields and Revenues										
2								A	B	C	D	E						
3	2019/20 Estimated ARC-CO Payment Rates for Soybeans							(A * B)		(86% of C)		(10% of C)						
4	County Name	ARC-CO Yield Designation	2013 trend adjusted (county yield or 80% of T)	2014 trend adjusted (county yield or 80% of T)	2015 trend adjusted (county yield or 80% of T)	2016 trend adjusted (county yield or 80% of T)	2017 trend adjusted (county yield or 80% of T)	2019 Bench Mark (2013-17 olympic avg)	2019 Bench Mark Price (2013-17 olympic avg)	2019 Benchmark Revenue	2019 Guarantee Revenue	2019 Maximum Payment Rate	2019 Estimated Yield	2019 Estimated National Price	2019 Estimated Revenue	Estimated 2019 Formula Payment Rate	Estimated 2019 Payment Rate	Estimated 2019 Payment per Base Acre
5	Adams	All	51.81	57.21	31.24	46.55	41.24	46.53	\$9.6300	\$448.08	\$385.35	\$44.81	47.61	\$9.00	\$428.49	\$0.00	\$0.00	\$0.00
6	Alcorn	All	41.24	40.90	40.13	43.26	47.04	41.80	\$9.6300	\$402.53	\$346.18	\$40.25	44.51	\$9.00	\$400.59	\$0.00	\$0.00	\$0.00
7	Amite	All	23.43	31.30	33.63	49.00	46.00	36.98	\$9.6300	\$356.12	\$306.26	\$35.61	38.67	\$9.00	\$348.03	\$0.00	\$0.00	\$0.00
8	Attala	All	31.62	40.58	27.17	43.56	44.41	38.59	\$9.6300	\$371.62	\$319.59	\$37.16	39.47	\$9.00	\$355.23	\$0.00	\$0.00	\$0.00
9	Benton	All	35.72	48.74	43.93	43.80	50.37	45.49	\$9.6300	\$438.07	\$376.74	\$43.81	46.51	\$9.00	\$418.59	\$0.00	\$0.00	\$0.00
10	Bolivar	Irrigated	60.25	62.96	59.49	63.83	62.49	61.90	\$9.6300	\$596.10	\$512.65	\$59.61	63.80	\$9.00	\$574.20	\$0.00	\$0.00	\$0.00
11	Bolivar	Nonirrigated	37.44	49.69	29.61	41.75	42.09	40.43	\$9.6300	\$389.34	\$334.83	\$38.93	42.12	\$9.00	\$379.08	\$0.00	\$0.00	\$0.00
12	Calhoun	All	41.08	45.92	41.08	39.71	45.21	42.46	\$9.6300	\$408.89	\$351.65	\$40.89	44.60	\$9.00	\$401.40	\$0.00	\$0.00	\$0.00
13	Carroll	Irrigated	49.46	52.61	48.43	52.85	47.66	50.17	\$9.6300	\$483.14	\$415.50	\$48.31	52.20	\$9.00	\$469.80	\$0.00	\$0.00	\$0.00
14	Carroll	Nonirrigated	44.00	49.04	36.98	32.39	34.61	38.53	\$9.6300	\$371.04	\$319.09	\$37.10	41.40	\$9.00	\$372.60	\$0.00	\$0.00	\$0.00
15	Chickasaw	All	36.99	44.28	34.98	37.16	34.31	36.38	\$9.6300	\$350.34	\$301.29	\$35.03	39.54	\$9.00	\$355.86	\$0.00	\$0.00	\$0.00
16	Choctaw	All	40.00	47.00	37.00	45.00	50.00	44.00	\$9.6300	\$423.72	\$364.40	\$42.37	45.80	\$9.00	\$412.20	\$0.00	\$0.00	\$0.00
17	Claiborne	All	54.86	63.89	38.90	49.00	45.90	49.92	\$9.6300	\$480.73	\$413.43	\$48.07	52.51	\$9.00	\$472.59	\$0.00	\$0.00	\$0.00
18	Clay	All	39.65	44.46	43.26	38.78	36.27	40.56	\$9.6300	\$390.59	\$335.91	\$39.06	42.48	\$9.00	\$382.32	\$0.00	\$0.00	\$0.00
19	Coahoma	Irrigated	57.07	57.54	51.97	53.19	58.21	55.93	\$9.6300	\$538.61	\$463.20	\$53.86	57.60	\$9.00	\$518.40	\$0.00	\$0.00	\$0.00
20	Coahoma	Nonirrigated	36.34	49.43	31.17	37.27	44.98	39.53	\$9.6300	\$380.67	\$327.38	\$38.07	41.84	\$9.00	\$376.56	\$0.00	\$0.00	\$0.00

Scroll down to find your county and yield designation

Numbers in RED can be changed and are estimates of 2019 county yield and national price



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# ARC Walkthrough

Program Year 2019 Benchmark Yields and Revenues

A	B	C	D	E
		(A * B)	(86% of C)	(10% of C)

## 2019/20 Estimated ARC-CO Payment Rates for Soybeans

County Name	ARC-CO Yield Designation	2013 trend adjusted (county yield or 80% of T)	2014 trend adjusted (county yield or 80% of T)	2015 trend adjusted (county yield or 80% of T)	2016 trend adjusted (county yield or 80% of T)	2017 trend adjusted (county yield or 80% of T)	2019 Bench Mark Price (2013-17 olympic avg)	2019 Bench Mark Price (2013-17 olympic avg)	2019 Benchmark Revenue	2019 Guarantee Revenue	2019 Maximum Payment Rate	2019 Estimated Yield	2019 Estimated National Price	2019 Estimated Revenue	Estimated 2019 Formula Payment Rate	Estimated 2019 Payment Rate	Estimated 2019 Payment per Base Acre
Adams	All	51.81	57.21	31.24	46.55	41.24	46.53	\$9.6300	\$448.08	\$385.35	\$44.81	47.61	\$9.00	\$428.49	\$0.00	\$0.00	\$0.00
Alcorn	All	41.24	40.90	40.13	43.26	47.04	41.80	\$9.6300	\$402.53	\$346.18	\$40.25	44.51	\$9.00	\$400.59	\$0.00	\$0.00	\$0.00
Amite	All	23.43	31.30	33.63	49.00	46.00	36.98	\$9.6300	\$356.12	\$306.26	\$35.61	38.67	\$9.00	\$348.03	\$0.00	\$0.00	\$0.00
Attala	All	31.62	40.58	27.17	43.56	44.41	38.59	\$9.6300	\$371.62	\$319.59	\$37.16	39.47	\$9.00	\$355.23	\$0.00	\$0.00	\$0.00
Benton	All	35.72	48.74	43.93	43.80	50.37	45.49	\$9.6300	\$438.07	\$376.74	\$43.81	46.51	\$9.00	\$418.59	\$0.00	\$0.00	\$0.00
Holivar	Irrigated	60.25	62.96	59.49	63.83	62.49	61.90	\$9.6300	\$596.10	\$512.65	\$59.61	63.80	\$9.00	\$574.20	\$0.00	\$0.00	\$0.00
Holivar	Nonirrigated	37.44	49.69	29.61	41.75	42.09	40.43	\$9.6300	\$389.34	\$334.83	\$38.93	42.12	\$9.00	\$379.08	\$0.00	\$0.00	\$0.00

Revenue cutoff for payments

Estimated Revenue = Estimated Yield x Estimated National Price

When Estimated Revenue is less than the 2019 Guarantee Revenue payments will occur



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# ARC Walkthrough

## Soybean ARC payment calculator: Boliver Example

County Name	ARC-CO Yield Designation	2019 Benchmark Revenue	2019 Guarantee Revenue	2019 Maximum Payment Rate	2019 Estimated Yield	2019 Estimated National Price	2019 Estimated Revenue	Estimated 2019 Formula Payment Rate	Estimated 2019 Payment Rate	Estimated 2019 Payment per Base Acre
Bolivar	Irrigated	\$596.10	\$512.65	\$59.61	63.80	\$9.00	\$574.20	\$0.00	\$0.00	\$0.00
Bolivar	Irrigated	\$596.10	\$512.65	\$59.61	56.00	\$9.00	\$504.00	\$8.65	\$8.65	\$7.35
Bolivar	Irrigated	\$596.10	\$512.65	\$59.61	63.80	\$8.00	\$510.40	\$2.25	\$2.25	\$1.91

The lower the yield and/or price the higher the payment

The price and/or yield needed for payments to start can be found by dividing the 2019 Guarantee Revenue by either 2019 Estimated Yield or 2019 Estimated National Price



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# ARC Walkthrough

## Soybean ARC payment calculator: Boliver Example

County Name	ARC-CO Yield Designation	2019 Benchmark Revenue	2019 Guarantee Revenue	2019 Maximum Payment Rate	2019 Estimated Yield	2019 Estimated National Price	2019 Estimated Revenue	Estimated 2019 Formula Payment Rate	Estimated 2019 Payment Rate	Estimated 2019 Payment per Base Acre
Bolivar	Irrigated	\$596.10	\$512.65	\$59.61	63.80	\$9.00	\$574.20	\$0.00	\$0.00	\$0.00
Bolivar	Irrigated	\$596.10	\$512.65	\$59.61	56.00	\$9.00	\$504.00	\$8.65	\$8.65	\$7.35
Bolivar	Irrigated	\$596.10	\$512.65	\$59.61	63.80	\$8.00	\$510.40	\$2.25	\$2.25	\$1.91

Example: 2019 Guarantee Revenue = \$500

2019 Estimated Yield = 63.80

2019 National price needed for payments to start:

$$\$512.65 / 63.80 = \$8.03$$



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# PLC Walkthrough

PLC only makes a payment when MYA price is below reference price

Reference Price (\$ per bushel)		Estimated 2019/20 MYA Price (\$ per bushel)	Expected PLC Payment Rate (\$ per bushel)
\$ 8.40		\$ 9.00	\$ -
Farm PLC Yield in Bushels per Acre	Expected PLC Payment (\$ per base acre)	<div>                     If Farm PLC Yield is out of the range shown, enter Farm PLC Yield in this cell.                 </div>	
30	-		
35	-		
40	-		
45	-		
50	-		
55	-		
60	-		
65	-		
70	-		
75	-		
80	-		
85	-		
90	-		
95	-		
100	-		
105	-		

Numbers in BLUE can be changed to see how estimated payments can change



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# PLC Walkthrough

Example: Estimated 2019/20 MYA price of \$8.00/bu  
 Farm PLC Yield of 63.8bu/ac  
 Expected PLC Payment = \$21.60/base acre

Reference Price (\$ per bushel)	\$	8.40	Estimated 2019/20 MYA Price (\$ per bushel)	\$	8.00	Expected PLC Payment Rate (\$ per bushel)	\$	0.40
Farm PLC Yield in Bushels per Acre	Expected PLC Payment (\$ per base acre)		If Farm PLC Yield is out of the range shown, enter Farm PLC Yield in this cell.					
63.8	\$	21.69						
68.8	\$	23.39						
73.8	\$	25.09						
78.8	\$	26.79						
83.8	\$	28.49						
88.8	\$	30.19						
93.8	\$	31.89						
98.8	\$	33.59						



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# ARC-PLC User Estimation Tool

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### User Estimation Tool

#### [User Estimation](#)

- The User Estimation Tool allows for a quick direct comparison between ARC and PLC
- This guide will go through a Bolivar County soybean producer's decision
- Price and yield used in this example are just example estimates



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# ARC-PLC User Estimation Tool

## ARC-CO and PLC Decision User Estimation Tool

**Directions.** This sheet is designed to allow the user to enter their own estimates for yields and prices and compare expected payments from the ARC-CO and PLC programs. Follow the steps below to complete the sheet. The final table will output expected ARC-CO and PLC payments per base acre based on the information you have entered. If at anytime you need to start over or would like to try estimates for a different county, click the reset button. You only need to enter information for crops you are interested in.

For ease of determining estimates for the Seed Cotton Program, this sheet will ask you to estimate county yields for cotton lint and prices for cotton lint and cotton seed. The sheet will apply all necessary formulas to convert these values to values used by the Seed Cotton program. For more information on these formulas see the Seed Cotton PLC sheet in this workbook.

### Step 1. Select your county from the drop down list in the highlighted cell.

County

Reset

Reset all  
selections  
inputted in  
this sheet

### Step 2. Yields

In Table 1, enter your estimates for what your county yield will be for 2019 in the green cells. Yield estimate in Table 1 will be used to calculate ARC-CO payments. In Table 2, enter your certified Farm Service Agency yields in the green cells. Yields in Table 2 will be used to calculate PLC payments.

Table 1.

	Yield	Estimated
Crop	Designation	County Yield

Table 2.

Crop	FSA Farm Yield
------	----------------

Select your county. Table 1 and Table 2 will change to represent the crops raised in a given county



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# ARC-PLC User Estimation Tool

## Walkthrough of Bolivar County Soybean Production

**Step 1. Select your county from the drop down list in the highlighted cell.**

County

Bolivar

Reset

### Step 2. Yields

In Table 1, enter your estimates for what your county yield will be for 2019 in the green cells. Yield estimate in Table 1 will be used to calculate ARC-CO payments. In Table 2, enter your certified Farm Service Agency yields in the green cells. Yields in Table 2 will be used to calculate PLC payments.

Table 1.

Crop	Yield Designation	Estimated County Yield	
Corn	Irrigated	60	bu/acre
Corn	Nonirrigated		bu/acre
Soybeans	Irrigated		bu/acre
Soybeans	Nonirrigated		bu/acre
Cotton Lint	Irrigated		lb/acre
Cotton Lint	Nonirrigated		lb/acre
Rice	All		lb/acre

Table 2.

Crop	FSA Farm Yield	
Corn	55	bu/acre
Seed Cotton		lb/acre
Rice		lb/acre
Soybeans		bu/acre

Input your for your farm PLC yields. This example is assuming farm yield is 55bu/ac

Crops in given county. In this example it is Bolivar county

Input your estimates for county yield for a given crop. For this example we estimate county soybean yield will be 60bu/ac



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# ARC-PLC User Estimation Tool

## Walkthrough of Bolivar County Soybean Production

### Step 3. Prices

In Table 3, enter your estimates for the 2019 Marketing Year Average Price for each commodity in the green cells.

Crop		
Corn		\$/bu
Cotton Lint		\$/lb
Cotton Seed		\$/lb
Rice		\$/cwt
Soybeans	\$ 8.30	\$/bu

The Seed Cotton MYA price is a weighted average of cotton lint and cotton seed prices.

Insert your estimate for the 2019 price for your given commodity. Here we are estimating that price will be \$8.30/bu



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# ARC-PLC User Estimation Tool

## Walkthrough of Bolivar County Soybean Production

**Step 4. The table below contains the estimate ARC-CO and PLC payments based on the information you have entered above.**

ARC-CO					
County	Crop	Yield Designation	FSA Revenue Guarantee	Estimated County Revenue	Estimated 2019 ARC-CO Payment per Base Acre
Bolivar	Corn	Irrigated	\$ 629.46		
	Corn	Nonirrigated	\$ 325.80		
	Soybeans	Irrigated	\$ 512.65	\$ 498.00	\$ 12.45
	Soybeans	Nonirrigated	\$ 334.83		
	Seed Cotton	Irrigated	\$ 889.46		
	Seed Cotton	Nonirrigated	\$ 766.14		
	Rice	All	\$ 886.81		

PLC				
Crop	PLC Reference Price	MYA Price	Expected PLC Payment Rate (\$ per bushel)	Expected PLC Payment (\$ per base acre)
Corn	\$ 3.70	\$ -		
Seed Cotton	\$ 0.37	\$ -		
Rice	\$ 14.00	\$ -		
Soybeans	\$ 8.40	\$ 8.30	\$ 0.10	\$ 4.67

ARC-CO payment per Base Acre

PLC payment per base acre

In this example ARC-CO had a higher payment than PLC. Changing price and yield will change whether ARC or PLC is optimal. Please try many combinations to see how it will impact the results.



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