Farm Profitability and Risk Going into 2022

ARC/PLC and Final Risk Management Thoughts



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farmdoc

Nick Paulson

Topics

2022 ARC/PLC Decision

- Deadline
- Program Choices
- Projections and Considerations

Risk Management Considerations

- Prices
- Costs
- Crop Insurance

















Make Program Selection by March 15, 2022

- By FSA Farm and Program Crop
 - 1. Price Loss Coverage (PLC)
 - 2. Agricultural Risk Coverage at County Level (ARC-CO)
- By FSA Farm
 - 3. ARC at the Individual Farm Level (ARC-IC)
- Default option is choice(s) from previous year
- 2022 crop year just starting,
 corn/soybean marketing year still months away

Where are you leaning for your 2022 ARC/PLC decisions on corn base?

- O ARC-CO
- **OPLC**
- O ARC-IC
- O Mix of programs



















Where are you leaning for your 2022 ARC/PLC decisions on soybean base?

- O ARC-CO
- **OPLC**
- O ARC-IC
- O Mix of programs



















Farm Bill Program Support in 2022

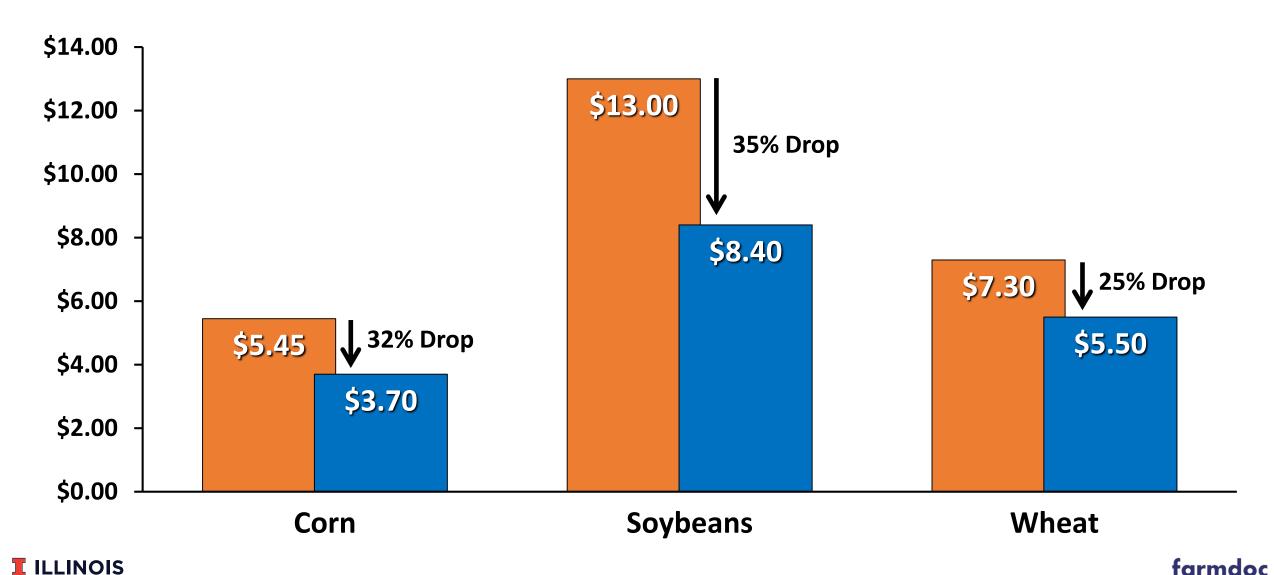
Parameters of 2022 PLC and ARC-CO Programs with February 2022 Price Expectataions

Program Crop	Effective Reference Price	ARC-CO Benchmark Price	Expected 2022 MYA Price ¹	Probability of Being Below Reference Price ²
Corn	\$3.70	\$3.70	\$5.45	3%
Soybeans	\$8.40	\$9.12	\$13.00	1%
Wheat	\$5.50	\$5.50	\$7.30	NA

^{1.} USDA-FSA data update 2/9/22

^{2.} Based on results from the Gardner Price Distribution Tool

Comparison of 2022 Projected Market Year Average (MYA) Prices and Price Loss Coverage (PLC) program Reference Prices



Ag Risk Coverage – County Level (ARC-CO)

Payments when county revenue < county guarantee

Revenue: County Yield x MYA Price

Guarantee: Benchmark Yield x Benchmark Price x 86%

	Corn	Soybeans	Wheat
Benchmark Price	\$3.70	\$9.12	\$5.50
Estimated Payment Trigger	\$3.18	\$7.84	\$4.73
Projected MYA Price	\$5.45	\$13.00	\$7.30

2022 ARC-CO Payment Trigger Prices for Different County Yield Percents¹

		Corn	Soybeans	Wheat
	55%	\$5.79	\$14.26	\$8.60
ld ²	60%	\$5.30	\$13.07	\$7.88
of Benchmark Yield ²	65%	\$4.90	\$12.07	\$7.28
ark	70%	\$4.55	\$11.20	\$6.76
mı	75%	\$4.24	\$10.46	\$6.31
ncł	80%	\$3.98	\$9.80	\$5.91
Be	85%	\$3.74	\$9.23	\$5.56
	90%	\$3.54	\$8.71	\$5.26
as %	95%	\$3.35	\$8.26	\$4.98
d a	100%	\$3.18	\$7.84	\$4.73
'iel	105%	\$3.03	\$7.47	\$4.50
ty Y	110%	\$2.89	\$7.13	\$4.30
County Yield	115%	\$2.77	\$6.82	\$4.11
S	120%	\$2.65	\$6.54	\$3.94
4 -	-l-000113	022		

^{1.} Equals 0.86 times 2022 benchmark price divided by county yield percent.

^{2.} Equals 2022 county yield divided by the 2022 benchmark yield.

Payment Scenarios

	ARC-CO	PLC
Large decline in prices, trend yields		√
Large county yield losses, expected prices		
Both price declines and yield losses	√	√

2022 Decisions: **Information Resources**

farmdoc.illinois.edu/crop-insurance





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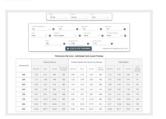
Crop Insurance

Crop Insurance Tools

Crop Insurance Premium Calculator

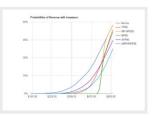
Last Updated: February 3, 2022

The 2022 iFarm Crop insurance Premium Calculator allows users to develop highly customized estimates of their crop insurance premiums, and compare revenue and yield guarantees across all available crop insurance products and elections for their actual



Crop Insurance Payment Evaluator Last Updated: February 24, 2022

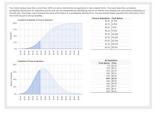
The 2022 iFarm Crop Insurance Payment Evaluator provides helpful information to producers comparing costs and risk reductions across their available crop insurance alternatives.



Price Distribution Tool

Last Updated: Always Live

The iFARM Price Distribution Tool uses current option market prices to derive estimates of the probability distribution of prices at the expiration of an underlying corn and soybean futures contracts



Crop Insurance Decision Tool

Last Updated: February 2, 2022

This program calculates premiums, evaluates insurance payments, and provides historical data useful when making crop insurance decisions for multiple crops. Estimates are for crops in midwest

As an alternative to the executable tool you can download the spreadsheet here.

Catch up with the farmdoc Daily Article

View our Youtube Guide here.



Post Application Coverage Endorsement Tool

Last Updated: February 16, 2022

This program calculates premiums for PACE: Post Application Coverage Endorsement Insurance.

As an alternative to the executable tool you can download the spreadsheet here



ECO/SCO Payment Estimator

Last Updated: February 25, 2021

With this program, a user can estimate payments for individual farm level crop insurance products in addition to SCO and ECO.

As an alternative to the executable tool you can download the spreadsheet here.







2022 Farm Bill What-If Tool

Continue

Updated 1/10/2021

This program calculates Agricultural Risk Coverage for County Coverage (ARC-CO) and Price Loss Coverage (PLC) payments. County yields and market year average (MYA) prices are brought in for a user-specified state-county-crop combination. Users then can change 2018 through 2020 county yields and prices to see ARC-CO and PLC payments under those yields and prices.

For recent updates on this tool and other FAST tools, visit us at www.farmdoc.uiuc.edu.









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Corn - Champaign

Table 1. Payments per Base Acre at Different Yields and Prices

			TUDIC III U	yments pe	TI Dase Acie	at Dilleren	it iicias aii	4 1 11003			
Program Se	election	PLC min	us ARC-CO		State = Illir	nois, County	y = Champa	ign, Crop =	Corn, Year	= 2022	
Price Chang	ge	\$	0.25		ARC-CO Be	nchmark Yi	eld = 222.18	3, Benchma	rk Price =\$	3.70, Guara	ntee \$706.
Yield Chan	ge		15		PLC Yield = 179, Effective Reference Price = \$3.70						
-2022											
County					2022 Mark	et Year Ave	rage Price				
Yield	\$3.50	\$3.75	\$4.00	\$4.25	\$4.50	\$4.75	\$5.00	\$5.25	\$5.50	\$5.75	\$6.00
297	30	0	0	0	0	0	0	0	0	0	0
282	30	0	0	0	0	0	0	0	0	0	0
267	30	0	0	0	0	0	0	0	0	0	0
252	30	0	0	0	0	0	0	0	0	0	0
237	30	0	0	0	0	0	0	0	0	0	0
222	30	0	0	0	0	0	0	0	0	0	0
207	30	0	0	0	0	0	0	0	0	0	0
192	1	0	0	0	0	0	0	0	0	0	0
177	-39	-36	0	0	0	0	0	0	0	0	0
162	-39	-70	-50	-15	0	0	0	0	0	0	0
147	-39	-70	-70	-69	-38	-7	0	0	0	0	0
	* A positive value indicates that PLC will pay more, a negative value indicates that ARC-CO will pay more.										

Soybeans - Champaign

Table 1. Payments per Base Acre at Different Yields and Prices

			TUDIC I.I	yments pe	TI Dase Acie	at Billerel	it ricias an	<u> </u>			
Program Se	election	PLC min	us ARC-CO		State = Illir	nois, Count	y = Champa	ign, Crop =	Soybeans, `	Year = 2022	
Price Chan	ge	\$	0.25		ARC-CO Be	nchmark Yi	eld = 68.96,	Benchmar	k Price = \$9	.12, Guaran	tee \$540.8°
Yield Chan	ge		5		PLC Yield =	55, Effective	ve Referenc	ce Price = \$8	3.40		
-2022											
County					2022 Mark	et Year Ave	rage Price				
Yield	\$10.75	\$11.00	\$11.25	\$11.50	\$11.75	\$12.00	\$12.25	\$12.50	\$12.75	\$13.00	\$13.25
94	0	0	0	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0	0	0	0
79	0	0	0	0	0	0	0	0	0	0	0
74	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0
49	-12	-2	0	0	0	0	0	0	0	0	0
44	-53	-49	-39	-30	-21	-11	-2	0	0	0	0
* A positive value indicates that PLC will pay more, a negative value indicates that ARC-CO will pay more.											

Wheat - Champaign

Table 1. Payments per Base Acre at Different Yields and Prices

		_	TUDIC 1. I C	yments pe	ei base Acie	at Differen	it iicias aii	a i iiccs			
Program Se	election	PLC min	us ARC-CO		State = Illir	nois, Count	y = Champa	ign, Crop =	Wheat, Yea	ar = 2022	
Price Chang	ge	\$	0.25		ARC-CO Be	nchmark Yi	eld = 78.99,	Benchmar	k Price = \$5	.50, Guaran	tee \$373.6
Yield Chang	ge		5		PLC Yield =	64, Effectiv	ve Referenc	ce Price = \$5	5.50		
-2022											
County					2022 Mark	et Year Ave	rage Price				
Yield	\$5.75	\$6.00	\$6.25	\$6.50	\$6.75	\$7.00	\$7.25	\$7.50	\$7.75	\$8.00	\$8.25
104	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0	0	0	0
7 9	0	0	0	0	0	0	0	0	0	0	0
74	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0
64	-5	0	0	0	0	0	0	0	0	0	0
59	-29	-17	-4	0	0	0	0	0	0	0	0
54	-37	-37	-31	-19	-8	0	0	0	0	0	0
•	* A positiv	ve value ind	icates that	PLC will pa	y more, a n	egative val	ue indicate:	s that ARC-0	CO will pay	more.	

Corn - Saline

Table 1. Payments per Base Acre at Different Yields and Prices

			TUDIC 1. I C	yments pe	ei base Acie	at Dilicici	it i icias aii	d i iiccs			
Program Se	election	PLC min	us ARC-CO		State = Illir	nois, County	y = Saline, C	Crop = Corn,	Year = 202	2	
Price Chang	ge	\$	0.25		ARC-CO Be	nchmark Yi	eld = 177.05	5, Benchma	rk Price =\$	3.70, Guara	ntee \$563.
Yield Chan	ge		10		PLC Yield = 150, Effective Reference Price = \$3.70						
-2022											
County			2022 Market Year Average Price								
Yield	\$3.50	\$3.75	\$4.00	\$4.25	\$4.50	\$4.75	\$5.00	\$5.25	\$5.50	\$5.75	\$6.00
227	26	0	0	0	0	0	0	0	0	0	0
217	26	0	0	0	0	0	0	0	0	0	0
207	26	0	0	0	0	0	0	0	0	0	0
197	26	0	0	0	0	0	0	0	0	0	0
187	26	0	0	0	0	0	0	0	0	0	0
177	26	0	0	0	0	0	0	0	0	0	0
167	26	0	0	0	0	0	0	0	0	0	0
157	14	0	0	0	0	0	0	0	0	0	0
147	-16	-10	0	0	0	0	0	0	0	0	0
137	-30	-42	-13	0	0	0	0	0	0	0	0
127	-30	-56	-47	-20	0	0	0	0	0	0	0
* A positive value indicates that PLC will pay more, a negative value indicates that ARC-CO will pay more.											

Soybeans - Saline

Table 1. Payments per Base Acre at Different Yields and Prices

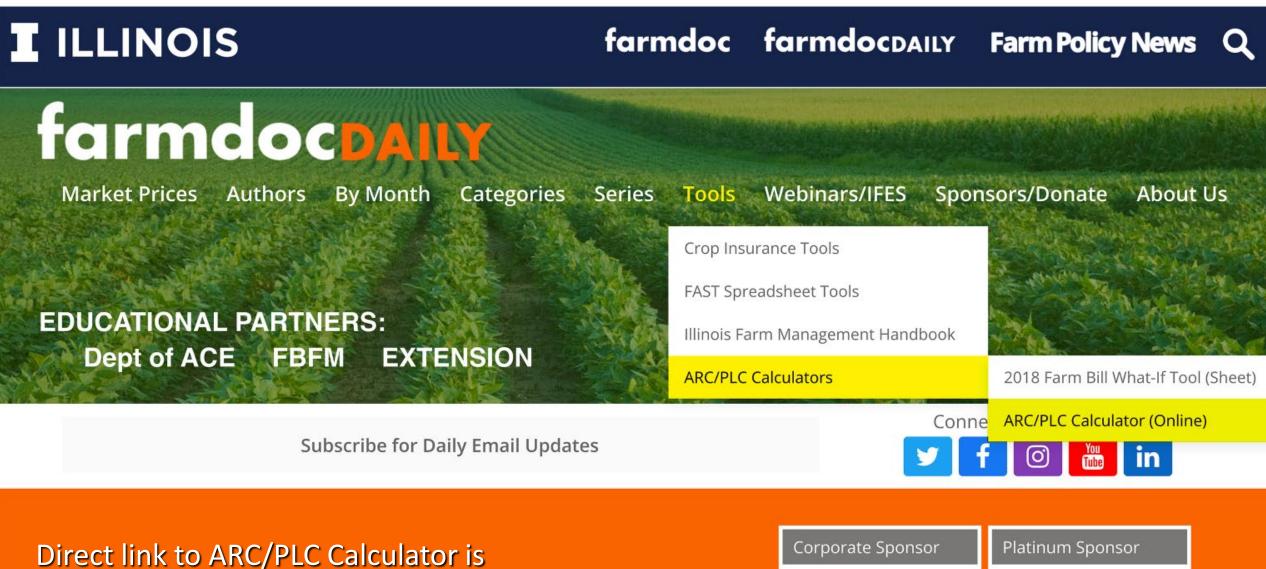
			TUDIC 1. I C	yments pe	ei base Acie	at Differen	it i icias an	a i iiccs			
Program Se	election	PLC min	us ARC-CO		State = Illin	nois, Count	y = Saline, C	Crop = Soyb	eans, Year :	= 2022	
Price Chang	ge	\$	0.25		ARC-CO Be	nchmark Yi	eld = 52.38,	Benchmar	k Price = \$9	.12, Guaran	tee \$410.8
Yield Chang	ge		5		PLC Yield =	45, Effectiv	ve Referenc	ce Price = \$8	3.40		
-2022											
County			2022 Market Year Average Price								
Yield	\$10.75	\$11.00	\$11.25	\$11.50	\$11.75	\$12.00	\$12.25	\$12.50	\$12.75	\$13.00	\$13.25
77	0	0	0	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0
37	-8	0	0	0	0	0	0	0	0	0	0
32	-41	-41	-40	-33	-26	-19	-12	-5	0	0	0
27	-41	-41	-41	-41	-41	-41	-41	-41	-41	-41	-41
* A positive value indicates that PLC will pay more, a negative value indicates that ARC-CO will pay more.											

Wheat - Saline

Table 1. Payments per Base Acre at Different Yields and Prices

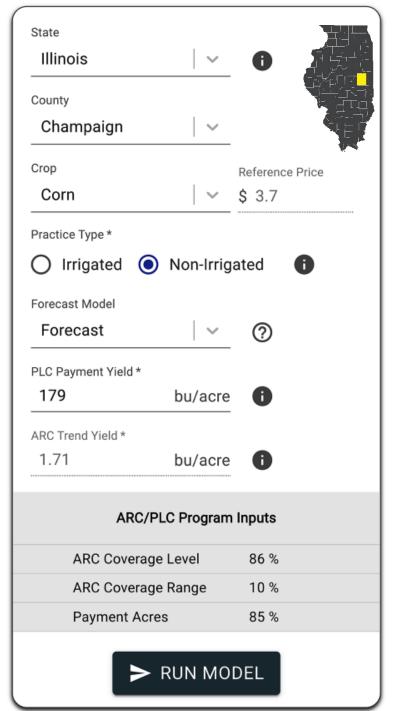
			TUDIC III U	yments pe	TI Dase Acie	di Bilicici	it iicias aii	<u> </u>			
Program Se	election	PLC min	us ARC-CO		State = Illir	nois, County	y = Saline, C	Crop = Whe	at, Year = 20)22	
Price Chang	ge	\$	0.25		ARC-CO Be	nchmark Yi	eld = 73.20,	eld = 73.20, Benchmark Price = \$5.50, Guarantee \$346			
Yield Chang	ge		5		PLC Yield = 62, Effective Reference Price = \$5.50						
-2022											
County					2022 Mark	et Year Ave	rage Price				
Yield	\$5.75	\$6.00	\$6.25	\$6.50	\$6.75	\$7.00	\$7.25	\$7.50	\$7.75	\$8.00	\$8.25
98	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0
83	0	0	0	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0	0	0	0
73	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0
58	-10	0	0	0	0	0	0	0	0	0	0
53	-34	-23	-12	0	0	0	0	0	0	0	0
48	-34	-34	-34	-28	-18	-8	0	0	0	0	0
	* A positive value indicates that PLC will pay more, a negative value indicates that ARC-CO will pay more.										

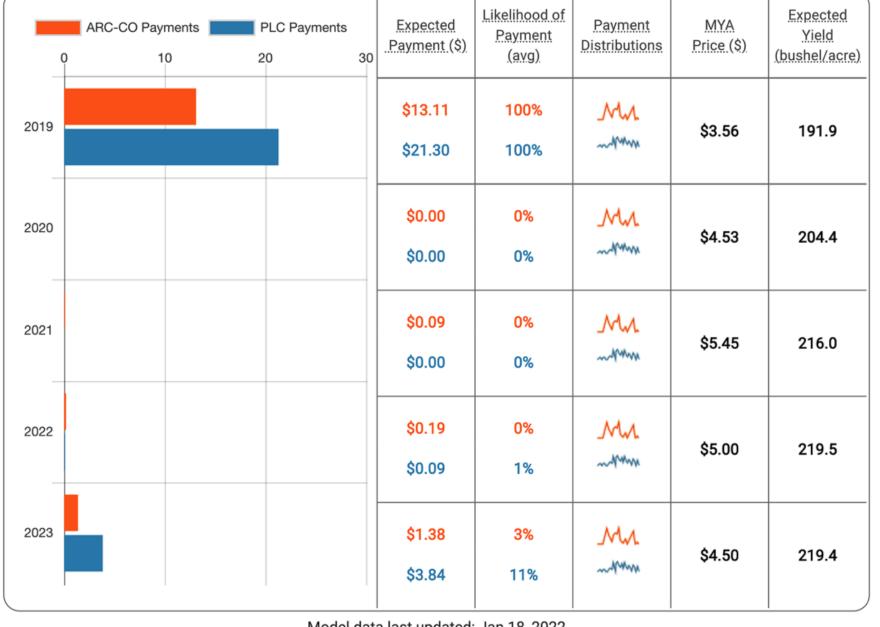
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Direct link to ARC/PLC Calculator is https://fd-tools.ncsa.illinois.edu/arcplc

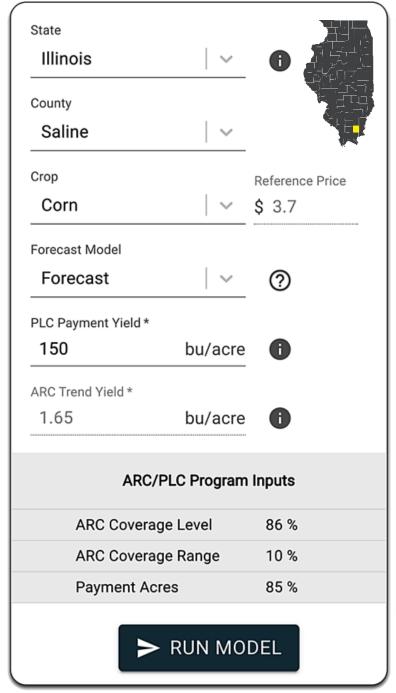


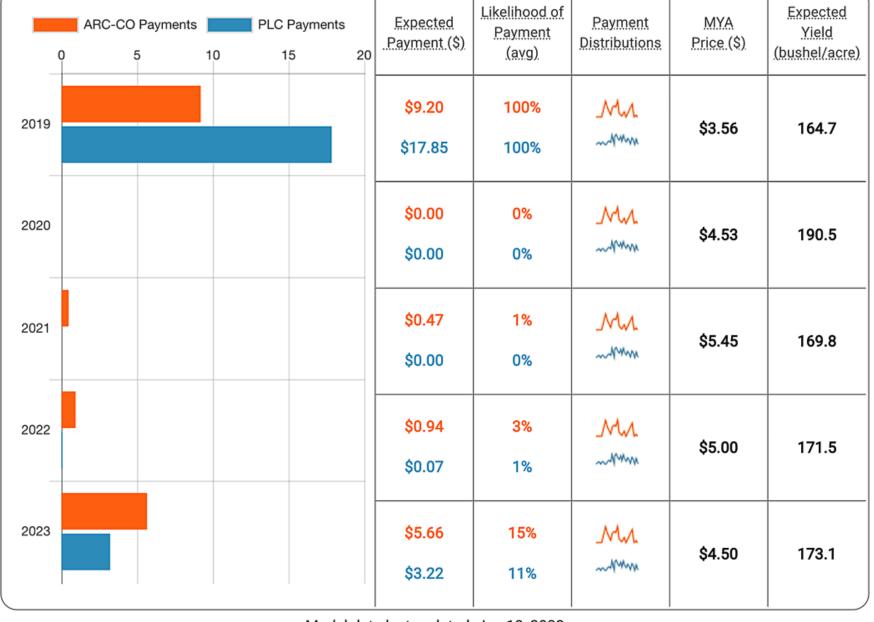




Model data last updated: Jan 18, 2022

2019 and 2020 numbers are actual values of ARC/PLC payments. All 2019 and 2020 yields and prices are final.





Model data last updated: Jan 18, 2022

2019 and 2020 numbers are actual values of ARC/PLC payments. All 2019 and 2020 yields and prices are final.

Ag Risk Coverage – Individual Level (ARC-IC)

- Use on 6% of corn and soybean base acres for 2019/2020 program years due to unique situation
- Important to know:
 - Only pays on 65% of base acres vs. 85% for other options
 - Requires extra paperwork
- May be a good option in 2022 in specific situations:
 - Generally would only want to use on a single FSA farm
 - Farm with highly variable yields
 - Farm with history of total prevent plant

2022 Farm Program Decision Summary

- Payments not likely on corn, soybean, or wheat base from PLC or ARC-CO given current prices
- Considerations:
 - What type of risk concerns you most?
 - Crop insurance choices/options (use of SCO requires PLC)

Other Risk Management Considerations

- Favorable prices, but high production costs
 - Higher expected revenues and insurance guarantees
 - Higher insurance premium costs
 - Increased downside risk
- Strategies for increased insurance protection
 - Supplemental area coverage plans: SCO and ECO

Do you plan to make any changes to your crop insurance coverage for 2022?

- Yes, reducing coverage levels and/or changing policy type
- Yes, increasing coverage and/or changing policy type
- O No, sticking with what I usually use
- Still undecided

















Updated 2022 Crop Budgets

- Based on farms enrolled in IL FBFM
- Record returns and incomes expected for 2021
- Positive returns projected for 2022
 - Favorable prices
 - High Costs

December 7, 2021 farmdoc daily

farmdocdaily.illinois.edu/2021/12/2022-updated-crop-budgets.html

Table 1. Corn and Soybean Returns, Central Illinois, High-Productivity Farmland

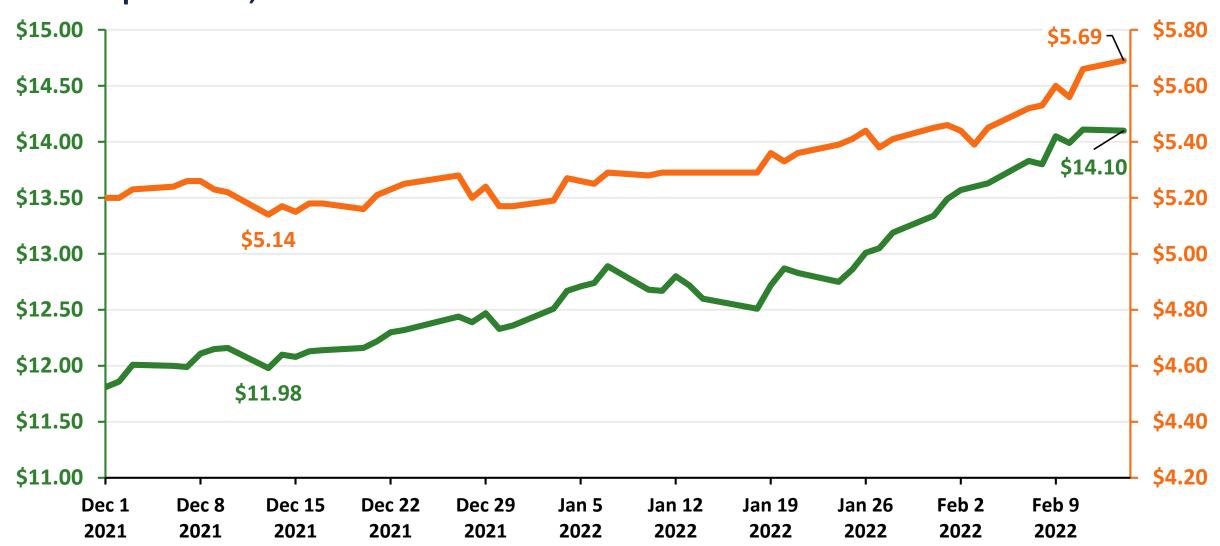
		Corn			Soybeans	
	2020	2021P	2022P	2020	2021P	2022P
Yield per acre	214	235	225	72	75	71
Price per bu	\$4.33	\$5.50	\$5.00	\$11.22	\$12.75	\$12.00
Crop revenue	\$927	\$1,293	\$1,125	\$808	\$956	\$852
ARC/PLC	0	0	0	0	10	0
Ad hoc Federal payments	68	0	0	45	0	0
Crop insurance proceeds	9	0	0	4	0	0
Gross revenue	\$1,004	\$1,293	\$1,125	\$857	\$966	\$852
Fertilizers	143	153	230	42	45	102
Pesticides	78	80	95	47	50	65
Seed	112	115	124	71	74	80
Drying	22	22	24	0	0	2
Storage	15	15	15	5	5	5
Crop insurance	21	24	24	14	16	16
Total direct costs	\$391	\$409	\$512	\$179	\$190	\$270
Machine hire/lease	16	17	19	14	14	16
Utilities	5	5	6	5	5	6
Machine repair	28	30	36	24	21	27
Fuel and oil	15	18	20	13	12	13
Light vehicle	2	2	2	1	1	1
Mach. depreciation	65	73	79	56	62	68
Total power costs	\$131	\$145	\$162	\$113	\$115	\$131
Hired labor	20	21	23	20	21	22
Building repair and rent	6	7	8	5	6	7
Building depreciation	13	14	15	11	12	13
Insurance	11	11	12	11	11	12
Misc	10	10	11	10	10	11
Interest (non-land)	17	14	12	15	12	10
Total overhead costs	\$77	\$77	\$81	\$72	\$72	\$75
Total non-land costs	\$599	\$631	\$755	\$364	\$377	\$476
Operator and land return	\$405	\$662	\$370	\$493	\$589	\$376
Land costs (cash rent)	279	284	309	279	284	309
Farmer return	\$126	\$378	\$61	\$214	\$305	\$67

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Corn and Soybean Prices

2022 crop fall bids, central IL



2022 Crop Insurance Decisions

	Corn	Soybeans
Projected Price*	\$5.86	\$14.29
TA Yield	220	70
Projected Revenue	\$1,289	\$1,000
85% Guarantee	\$1,096	\$850
80% Guarantee	\$1,031	\$800
Total Costs**	\$1,065	\$786

^{*}Based on February settlements through Feb. 22nd. Will not be finalized for corn and soybeans until the end of February.

^{**2022} Il Crop Budgets, December 2021



Supplemental and Enhanced Coverage Options

- Optional endorsements to add to underlying individual plans of insurance to create an insurance "bundle"
 - SCO provides county coverage
 from 86% down to individual coverage
 - ECO provides county coverage
 from either 90% or 95% down to 86%
- SCO can only be used on PLC acres
- ECO can be used regardless of farm program choice

Do you think you will consider using SCO and/or ECO for 2022 insurance coverage?

○Yes

ONo

OStill undecided



















Supplemental and Enhanced Coverage Options

Strategy	Advantages	Disadvantages
ADD SUPPLEMENTAL Add SCO and/or ECO to highest available individual coverage (i.e. RP-85% + SCO + ECO-95%)	Maximizes total coverage	High premium cost
BUY DOWN, ADD SUPPLEMENTAL Reduce individual coverage, add SCO and/or ECO (i.e. RP-80% + SCO + ECO-90%)	Achieve higher coverage level than individual plan alone Comparable/similar premium costs	Trade some farm-level coverage for county-level (basis risk)
SHIFT POLICY, ADD SUPPLEMENTAL Shift from RP to RPhpe, add SCO and/or ECO (i.e. Rphpe-85% + SCO + ECO-90%)	Achieve higher coverage level than individual plan alone Similar or potentially lower premium cost	Give up price increase guarantee aspect of RP

Summary

- At current prices, positive returns are expected for 2022
 Increased production costs heightens downside risks
- ARC/PLC programs not likely to trigger support in 2022
 Payments would likely not offset the financial losses experienced
- Crop insurance guarantees & premiums higher given prices
 May consider alternatives, such as supplemental area plans
- Crop marketing considerations

TIAA Center for Farmland Research















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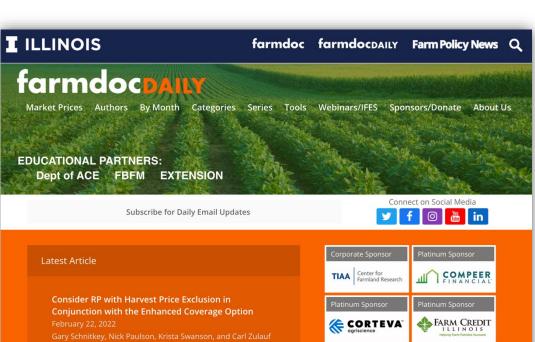


Extension

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