



Weekly Farm Economics: Crop Insurance Premium in 2023

Gary Schnitkey, Nick Paulson, Jim Baltz, and Ryan Batts

Department of Agricultural and Consumer Economics
University of Illinois

Carl Zulauf

Department of Agricultural, Environmental and Development Economics
Ohio State University

January 10, 2023

farmdoc daily (13): 4

Recommended citation format: Schnitkey, G., C. Zulauf, N. Paulson, J. Baltz, and R. Batts. “[Crop Insurance Premium in 2023](#).” *farmdoc daily* (13): 4, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, January 10, 2023.

Permalink: <https://farmdocdaily.illinois.edu/2023/01/crop-insurance-premium-in-2023.html>

The 2023 Crop Insurance Decision Tool has been released and can be used to calculate premiums (click [here](#) for download). We used the 2022 and 2023 versions of the tool to evaluate how rate changes will impact premiums in 2023. Overall, rate changes increase premiums for corn and soybeans in many counties if projected price and volatilities are the same as last year. Projected prices and volatilities in 2023 will influence premiums.

2023 Crop Insurance Decision Tool

Figure 1 shows the 2023 Premium Calculator, which gives farmer-paid premiums for a user-specified state, county, and crop. In Figure 1, premiums are shown for soybeans in DeKalb County, Illinois (see the top left corner of Figure 1). Once a state and crop are selected, default values come in for all parameter items, which have blue lettering on yellow background. Defaults represent a typical case for the county and can be changed.

We request all readers, electronic media and others follow our citation guidelines when re-posting articles from farmdoc daily. Guidelines are available [here](#). The farmdoc daily website falls under University of Illinois copyright and intellectual property rights. For a detailed statement, please see the University of Illinois Copyright Information and Policies [here](#).

State: Illinois
 County: DeKalb
 Crop: Soybeans

2023 iFARM Premium Calculator
 Date Printed: 1/7/23



Individual Farm Level Policies

Quote input -->		APH Yield: 63.0	TAYE adjustment	TA	TA Yield: 65.0	Rate Yield: 63.0	Risk class: None						
		Acre: 100	Type: No Type Specified	Practice: Nfac (Non-Irrigated)		Prevented planting: Standard							
Coverage Level	Revenue Protection (RP)				Revenue Protection with Harvest Price Exclusion (RPphe)				Yield Protection (YP)				
	Enterprise	Basic	Optional	Minimum Revenue Guarantee	Enterprise	Basic	Optional	Revenue Guarantee	Enterprise	Basic	Optional	Yield Guarantee	
	\$ per Acre			\$/acre	\$ per Acre			\$/acre	\$ per Acre			Bu./acre	
50%	0.38	0.62	0.88	466	0.28	0.46	0.65	466	0.30	0.50	0.69	32.5	
55%	0.57	1.02	1.35	512	0.39	0.70	0.93	512	0.40	0.72	0.99	35.8	
60%	0.92	1.66	2.12	559	0.59	1.05	1.34	559	0.57	1.03	1.37	39.0	
65%	1.52	3.12	3.80	605	0.91	1.86	2.27	605	0.84	1.72	2.19	42.3	
70%	2.41	4.94	5.76	652	1.39	2.85	3.33	652	1.21	2.48	3.07	45.5	
75%	4.19	8.20	9.22	699	2.35	4.60	5.20	699	1.97	3.87	4.66	48.8	
80%	8.98	14.70	16.03	745	4.94	8.12	8.88	745	4.02	6.63	7.74	52.0	
85%	18.76	24.89	26.55	792	10.30	13.73	14.71	792	7.84	10.56	12.05	55.3	
Parameters		Projected Price: \$14.33				Volatility (revenue): 0.19				Parameters			

Supplemental Coverage Option (SCO) and Enhanced Coverage Option (ECO)

Underlying Farm Policy		RP	Unit	Enterprise	Type: No type specified	Practice: Non-irr (NFAC)						
Coverage Level	SCO	ECO			Combined Policy Premiums							
	SCO	ECO-90%	ECO-95%	RP	SCO	RP	SCO	RP	SCO	RP	SCO	RP
	\$ per acre	\$ per acre			\$ per acre							
50% - 86%	9.47	8.7	23.94	0.38	9.85	18.55	33.79	9.08	24.32	Premiums in green box add together the		
55% - 86%	9.47	8.7	23.94	0.57	10.04	18.74	33.98	9.27	24.51	1. underlying policy		
60% - 86%	9.43	8.7	23.94	0.92	10.35	19.05	34.29	9.62	24.86	2. SCO		
65% - 86%	9.24	8.7	23.94	1.52	10.76	19.46	34.70	10.22	25.46	3. ECO		
70% - 86%	8.80	8.7	23.94	2.41	11.21	19.91	35.15	11.11	26.35	Column headings indicated		
75% - 86%	7.54	8.7	23.94	4.19	11.73	20.43	35.67	12.89	28.13	indicated combinations		
80% - 86%	5.04	8.7	23.94	8.98	14.02	22.72	37.96	17.68	32.92			
85% - 86%	1.06	8.7	23.94	18.76	19.82	28.52	43.76	27.46	42.70			

County Level Product

Quote input -->		Type: No type specified	Practice: Non-irr (NFAC)	Expected yield: 65.5	Pro price: \$14.33	Volatility 0.19						
Coverage Level	Area Revenue Protection (ARP)				Area Revenue Protection with Harvest Price Exclusion (ARPhpe)				Area Yield Protection (AYP)			
	Protection Factor			Minimum Revenue Guarantee	Protection Factor			Revenue Guarantee	Protection Factor			Yield Guarantee
	120%	85%	80%		120%	85%	80%		120%	85%	80%	
	\$ per Acre			\$/acre	\$ per Acre			\$/acre	\$ per Acre			Bu./acre
70%	2.49	1.76	1.66	657	1.89	1.34	1.26	657	1.48	1.05	0.99	45.9
75%	5.32	3.77	3.55	704	5.17	3.66	3.45	704	2.17	1.54	1.45	49.1
80%	11.15	7.90	7.43	751	10.39	7.36	6.93	751	3.09	2.19	2.06	52.4
85%	22.11	15.66	14.74	798	19.65	13.92	13.10	798	4.61	3.27	3.07	55.7
90%	38.85	27.52	25.90	845	32.36	22.92	21.57	845	8.00	5.67	5.33	59.0

The iFARM Premium Calculator was developed at the University of Illinois and is available downloads at farmdoc (www.farmdoc.illinois.edu). Updated: January 4, 2023

The Premium Calculator is described in a [January 19, 2021, farmdoc daily](#) article. In the following, we will focus on Revenue Protection (RP) premiums with enterprise units. RP is used on over 90% of Illinois's acres for corn and soybeans (see [farmdoc daily, November 17, 2020](#)). Enterprise units are the most used unit structure. In the above example, farmer-paid premiums for enterprise units ranged from \$.38 per acre for a 50% coverage level to \$18.76 per acre for an 85% coverage level.

2023 Rates

Premiums shown in Figure 1 are calculated using 2023 rates released by the Risk Management Agency (RMA). These premiums are not final as projected prices and volatilities have yet to be set. Figure 1 uses the projected price and volatility for 2022. If the user wishes, the projected price and the volatility can be changed. When projected prices and volatilities are known at the end of February, premiums also will be known for 2023. By the March 15 deadline, farmers can change crop insurance choices from the previous year.

In 2022, the projected price for corn was \$5.90 per bushel. The corn projected price is based on settlement prices of the Chicago Mercantile Exchange (CME) December contract during February. Current prices of the December 2023 contract are near \$5.90 per bushel, roughly the same as the 2022 projected price.

In 2022, the projected price for soybeans was \$14.33 per bushel. The average of the February settlement prices of the November contract is used to set the projected price for soybeans. Current prices of the November 2023 contract are near \$14.00, slightly below the 2022 projected price. Premiums decrease with lower projected prices, and vice versa.

Volatilities are based on data from the last five days of February. In 2022, volatilities were .22 for corn and .19 for soybeans. Current trading data point to a .21 for corn and .16 for soybeans. Both volatility estimates are below 2022 volatilities. Lower volatilities will lower the premium and vice versa.

Table 1 shows farmer-paid premium estimates for corn and soybeans in three counties: DeKalb County is in northern Illinois, Champaign County is in central Illinois, and Saline County is in southern Illinois. Premiums are shown for 2022 and 2023, with details of the individual quotes given in the table's footnotes. In addition, the 2022 projected prices and volatilities are used for 2023. Using the same factors allows an assessment of how RMA rate changes impact premiums.

Table 1. Premiums for Revenue Protection using Enterprise Units in Select Counties in Illinois in 2022 and 2023

	DeKalb ¹			Champaign ¹			Saline ²		
	2022	2023	Change	2022	2023	Change	2022	2023	Change
Panel A. Corn³									
50%	\$0.69	\$0.69	0.0%	\$0.98	\$0.99	1.0%	\$6.83	\$6.41	-6.1%
55%	\$1.08	\$1.09	0.9%	\$1.50	\$1.52	1.3%	\$8.57	\$7.99	-6.8%
60%	\$1.65	\$1.66	0.6%	\$2.14	\$2.20	2.8%	\$10.58	\$9.87	-6.7%
65%	\$2.51	\$2.54	1.2%	\$3.07	\$3.17	3.3%	\$12.88	\$12.09	-6.1%
70%	\$3.93	\$3.99	1.5%	\$4.67	\$4.84	3.6%	\$15.52	\$14.78	-4.8%
75%	\$7.43	\$7.59	1.5%	\$8.55	\$8.86	3.6%	\$21.93	\$21.34	-2.7%
80%	\$15.32	\$15.64	2.1%	\$17.55	\$17.78	1.3%	\$36.79	\$36.08	-1.9%
85%	\$31.34	\$31.93	1.9%	\$34.50	\$35.77	3.7%	\$63.66	\$62.85	-1.3%
Panel B. Soybeans⁴									
50%	\$0.37	\$0.38	2.7%	\$0.19	\$0.19	0.0%	\$2.84	\$2.91	2.5%
55%	\$0.56	\$0.57	1.8%	\$0.30	\$0.31	3.3%	\$3.63	\$3.72	2.5%
60%	\$0.92	\$0.92	0.0%	\$0.52	\$0.53	1.9%	\$4.77	\$4.88	2.3%
65%	\$1.51	\$1.52	0.7%	\$0.90	\$0.92	2.2%	\$5.98	\$6.12	2.3%
70%	\$2.39	\$2.41	0.8%	\$1.51	\$1.53	1.3%	\$7.51	\$7.68	2.3%
75%	\$4.16	\$4.19	0.7%	\$2.85	\$2.88	1.1%	\$10.87	\$11.11	2.2%
80%	\$8.94	\$8.98	0.4%	\$6.49	\$6.54	0.8%	\$19.04	\$19.44	2.1%
85%	\$18.64	\$18.76	0.6%	\$14.14	\$14.22	0.8%	\$35.58	\$36.29	2.0%



¹ For corn, a 210 bushel per acre Actual Production History (APH) and 220 bushel per acre Trend Adjusted (TA) yield is used. For soybeans, a 63 APH yield and 65 TA yield is used.

² For corn, a 167 APH and 175 TA yield is used. For soybeans, a 48 APH yield and 50 bushel TA yield is used.

³ The 2022 values are used for both 2022 and 2023: \$5.90 for projected price and .23 for volatility.

⁴ The 2022 values are used for both 2022 and 2023: \$14.33 for projected price and .19 for volatility.



Rate Changes from 2022 to 2023

For corn, both DeKalb and Champaign counties have premium increases if 2023 factors equal 2022 factors. In DeKalb County, the RP premium increases from \$31.34 per acre to \$31.93 per acre, a 1.9% increase. In Champaign County, the 85% premium increases by 3.7%. Saline County's 75% RP premium decreased from \$21.93 per acre to \$21.34 per acre, a 2.7% decrease.

For soybeans, RP premiums increases in all three counties. At the 85% coverage level, premiums increased by 0.6% in DeKalb County, 0.8% in Champaign County, and 2.0% in Saline County. Champaign County's premiums were \$14.14 per acre in 2022 and \$14.22 in 2023.

Rate changes occur as RMA adds another year of data to ratings. For 2023, data for 2021 are available for ratings. The rating increases are surprising as 2021 was a low-loss year in Illinois (see *farmdoc daily*, July 5, 2022). The loss ratio for corn was .24 and .28 for soybeans, well below the 1.0 statutory goal of RMA, and two of the lowest loss ratios in history.

Summary

The 2023 Crop Insurance Decision Tool has been released and is available for use. It can be downloaded [here](#). Projected prices and volatilities will impact premiums, and February is the month for setting those values.

References

[Crop Insurance Decision Tool – Spring 2023](#). Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, Updated January 5, 2023.

Schnitkey, G., C. Zulauf, K. Swanson, N. Paulson and J. Baltz. "[The 2021 Crop Insurance Loss Performance](#)." *farmdoc daily* (12):100, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, July 5, 2022.

Schnitkey, G., N. Paulson, C. Zulauf and K. Swanson. "[Revenue Protection: The Most Used Crop Insurance Product](#)." *farmdoc daily* (10):198, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, November 17, 2020.

Schnitkey, G., R. Batts, K. Swanson, N. Paulson and C. Zulauf. "[Release of the 2021 Crop Insurance Decision Tool](#)." *farmdoc daily* (11):8, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, January 19, 2021.