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## Weekly Farm Economics: PLC and ARC Payment: 2021 Payments and Outlook for 2022 and 2023

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The Farm Service Agency (FSA) recently released all the information necessary to calculate 2021 commodity title payments. For 2021, Price Loss Coverage (PLC) did not make payments for corn, soybeans, and wheat. For 2021, Agricultural Risk Coverage at the County Level (ARC-CO) did not pay for corn, soybeans, and wheat in Illinois, Indiana, and Iowa. Outside the I-states, a few counties received 2021 ARC-CO payments. For 2022, current prices for corn, soybeans, and wheat suggest that PLC will not make payments, and few counties will receive ARC-CO payments. All information needed to calculate 2023 effective reference prices and ARC-CO benchmark prices are now available and reported in the 2023 outlook section.

### 2021 Payments

PLC and ARC-CO use market year average (MYA) prices when calculating payments (see *farmdoc daily*, [September 24, 2019](#), and [September 17, 2019](#), for more detail on PLC and ARC-CO). The 2021 market year for corn and soybeans began in September 2021 and ended in August 2022. As a result, PLC and ARC-CO payments could not be made until the final MYA prices were released in late September. In addition, the Farm Service Agency (FSA) recently released county yields used in calculating ARC-CO payments.

The 2021 MYA price for corn was \$6.00 per bushel (see Table 1). PLC makes payments when the MYA price is below the effective reference price, which was \$3.70 per bushel in 2021 for corn. Since the \$6.00 corn price was above the \$3.70 effective reference price, PLC did not make a payment for corn.

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**Table 1. 2021 Market Year Average Prices, Effective Prices, and ARC-CO Benchmark Prices**

Crop Unit in Bushels Unit in Pounds	Market Year Average Price	Effective Reference Price	ARC-CO Benchmark Price	PLC Payment Rate <sup>1</sup>	Break-Even ARC-CO County Yield <sup>2</sup>
Corn	6.00	3.70	3.70	0.00	53%
Soybeans	13.30	8.40	8.95	0.00	58%
Wheat	7.63	5.50	5.50	0.00	62%
Seed cotton	0.4675	0.367	0.367	0.00	68%
Peanuts	0.243	0.2675	0.2675	0.02	95%
Barley	5.31	4.95	4.95	0.00	80%
Canola	0.329	0.202	0.202	0.00	53%
Crambe	0.226	0.202	0.259	0.00	99%
Dry Peas	0.162	0.110	0.113	0.00	60%
Flaxseed	25.900	11.284	11.284	0.00	37%
Grain Sorghum	5.94	3.95	3.95	0.00	57%
Large Chickpeas	0.365	0.215	0.288	0.00	68%
Lentils	0.356	0.200	0.249	0.00	60%
Mustard Seed	0.311	0.202	0.302	0.00	84%
Oats	4.55	2.40	2.55	0.00	48%
Rapeseed	0.188	0.202	0.219	0.01	100%
Rice (long grain) P	0.137	0.140	0.140	0.00	88%
Rice (med/short) P	0.141	0.140	0.140	0.00	85%
Rice (temp) P	0.257	0.173	0.198	0.00	66%
Safflower	0.255	0.202	0.204	0.00	69%
Sesame Seed	0.390	0.202	0.353	0.00	78%
Small Chickpeas	0.333	0.190	0.238	0.00	62%
Sunflower Seed	0.329	0.202	0.202	0.00	53%

<sup>1</sup> Equals effective reference price minus market year average price, when market year average price is below effective reference price, zero otherwise.

<sup>2</sup> ARC-CO pays when actual yield is below benchmark yield times percentage below.

P means preliminary



Source: Farm Service Agency



ARC-CO is a county revenue program making a payment when county revenue (MYA price x county yield) is below 86% of benchmark revenue. Benchmark revenue is a benchmark price times benchmark county yield. The benchmark price is the Olympic Average of the previous five years of prices, lagging one year, with each price capped at the effective reference price. The benchmark county yield is the Olympic average of the five previous county yields, trend-adjusted, lagged one year and capped at 80% of the t-yield. Benchmark yields will vary by county and generally vary based on productivity. Given MYA and ARC-CO benchmark prices, the county yield at which ARC-CO payments would be triggered, referred to as the break-even county yield, can be calculated. For corn, the break-even yield equals 53% of the county benchmark yield for corn in 2021 (see Table 1). ARC-CO payments will be triggered in counties where the actual county corn yield is less than this break-even yield.

As an example, the 2021 benchmark yield for non-irrigated corn grown in Champaign County, Illinois, is 223.18 bushels per acre. For ARC-CO to make a payment, the county yield would have to be below 118.29 bushels per acre (223.18 benchmark yield x 53% break-even yield). The actual yield in Champaign County was 228.28 bushel per acre, well above the 118.29 break-even yield, resulting in no ARC-CO payments.

Overall yields below 53% are very distressed, and few counties nationwide had ARC-CO payments for corn. For corn, no payments occurred in Illinois, Indiana, or Iowa. Corn ARC-CO payments happened for a few counties in Arkansas, Colorado, Florida, Georgia, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Nebraska, North Dakota, Oklahoma, South Dakota, Texas, and Virginia.

For soybeans, the 2021 MYA price was \$13.30 per bushel, well above the \$8.40 effective reference price. PLC did not make payments for soybeans. The ARC-CO break-even yield was 58% of the county benchmark yield. No ARC-CO payments occurred in Illinois, Indiana, and Iowa. Soybean ARC-CO payments were made in three counties in North Dakota (McKenzie, Sheridan, and Williams Counties).

For wheat, the 2021 MYA price was \$7.63 per bushel, well above the \$5.50 effective reference price. PLC did not make payments for wheat. No ARC-CO payments occurred in Illinois, Indiana, and Iowa. ARC-CO made a payment in only one county: Big Horn County in Montana.

Overall, PLC made payments for only two crops: Peanuts was a \$.02 payment rate per pound, and rapeseed with a \$.01 payment rate (see Table 1). PLC and ARC-CO payments were limited, primarily because of high prices relative to PLC and ARC-CO benchmark prices.

## **2022 Outlook**

Given the current price outlook for 2022, PLC and ARC-CO payments likely will again be very limited. Table 2 shows effective reference prices and ARC-CO benchmark prices for 2022. For corn, the 2022 effective reference price and the 2022 ARC-CO benchmark price is \$3.70 per bushel. The Office of the Chief Economist of the U.S. Department of Agriculture provides forecasts for 2022 MYA prices in the World Agricultural Supply and Demand Estimates (WASDE) report. In the October 2022 report, the 2022 MYA price is forecast at \$6.80, well above the \$3.70 effective reference price. At that price, PLC would not make payments. The ARC-CO break-even county yield would be 46% of the benchmark yield, indicating that severe yield losses would be needed for payments to occur.

The 2022 effective reference price for soybeans is \$8.40 (see Table 2), while the MYA price forecast is \$14.00 per bushel in the October 2022 WASDE report. Therefore, no PLC payments would be made at those prices. The 2022 ARC-CO benchmark price is \$9.12, giving a break-even yield of 79% of the county benchmark yield.

For wheat, the 2022 effective reference price and 2022 ARC-CO benchmark price is \$5.50 per bushel. The 2022 MYA price is forecast at \$9.20 per bushel in the October 2022 WASDE report. No PLC payments would occur at that price. The break-even ARC-CO yield is 51% of the benchmark county yield.

Currently, most farmers are reporting fairly good yields in the Midwest, suggesting limited ARC-CO payments.

**Table 2. Effective Reference Prices and ARC-CO Benchmark Prices for 2022 and 2023**

Crop Unit in Bushels Unit in Pounds	Effective Reference Price	ARC-CO Benchmark Price		
	2022 & 2023	2022	2023	Difference
Corn	3.70	3.70	3.98	+0.28
Soybeans	8.40	9.12	9.57	+0.45
Wheat	5.50	5.50	5.50	
Seed cotton	0.367	0.367	0.367	
Peanuts	0.2675	0.2675	0.2675	
Barley	4.95	4.95	4.95	
Canola	0.202	0.202	0.202	
Crambe	0.202	0.202	0.233	+0.03
Dry Peas	0.110	0.110	0.113	
Flaxseed	11.284	11.284	11.284	
Grain Sorghum	3.95	3.95	4.31	+0.36
Large Chickpeas	0.225	0.225	0.268	+0.04
Lentils	0.200	0.200	0.219	+0.02
Mustard Seed	0.232	0.232	0.285	+0.05
Oats	2.40	2.40	2.75	+0.35
Rapeseed	0.202	0.202	0.202	
Rice (long grain) P	0.140	0.140	0.140	
Rice (med/short) P	0.140	0.140	0.140	
Rice (temp) P	0.185	0.185	0.218	+0.03
Safflower	0.202	0.202	0.207	+0.01
Sesame Seed	0.232	0.232	0.363	+0.13
Small Chickpeas	0.190	0.190	0.224	+0.03
Sunflower Seed	0.202	0.202	0.205	

P means preliminary



Source: Farm Service Agency



## 2023 Outlook

Table 2 shows the 2023 effective reference prices and 2023 ARC-CO benchmark prices. For 2023, the ARC-CO benchmark prices will be higher than 2022 prices for corn and soybeans. For corn, the 2023 ARC-CO price is \$3.98, \$.28 higher than the \$3.70 benchmark price. For soybeans, the 2023 benchmark price is \$9.57, \$.45 higher than the 2022 benchmark price.

Farmers have until March 15 to change their commodity title choices for the 2023 crop year. More detail on these choices will be provided as 2022 yields come into more precise focus. That focus likely will reduce some of the uncertainty about 2023 prices. We will provide revised estimates of the chance of PLC and ARC-CO making payments after the first of the year.

## Summary

High prices have occurred in agriculture since the middle of 2020. As a result, commodity title payments have been limited. PLC did not make payments for corn, soybeans, and wheat for the 2021 crop year and PLC payments are not likely for the 2022 crop year. No counties in the I-states received ARC-CO payments for corn, soybeans, and wheat for the 2021 crop year. ARC-CO payments likely will also be limited for 2022.

## References

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.

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.