

2021 USDA Farm Commodity Programs: Should I choose ARC-CO or PLC?

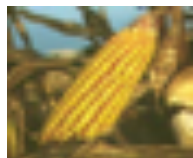


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Goals for Today

- Revisiting ARC & PLC Programs
 - Sign-up deadlines & background
- Things to consider in making the choice
- Analysis from on-line decision tools
 - **Punchline**: looks to be PLC for corn and ARC-CO for soybeans* (at least in Eastern NC)



Commodity Programs

- Important enrollment information:
 - Need to enroll every year

Contract Year	Enrollment Dates
2019	September 3, 2019 through March 15, 2020
2020	October 7, 2019 through June 30, 2020
2021	October 2020 through March 15, 2021
2022	October 2021 through March 15, 2022
2023	October 2022 through March 15, 2023

- One ARC vs PLC choice for 2019 & 2020, with chance to change in 2021, 2022, & 2023 – more flexibility!

Commodity Programs

- **Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC)** programs were re-authorized under the 2018 Farm Bill
 - **ARC offers revenue protection**
 - **ARC-CO** makes a payment on **85%** of base acres when county revenue falls below the county revenue guarantee
 - **ARC-I** makes a payment on **65%** of base acres when individual farm revenue falls below the individual revenue guarantee
 - **PLC offers price protection**
 - PLC makes a payment when effective price is below reference price

Price Loss Coverage (PLC)

- Payments made when **Effective Price** falls below the **Reference Price**
 - Effective Price is the higher of **National Marketing Year Ave. Price (NMYAP)** or **Marketing Loan Rate (MLR)**

Commodity	Reference Price	Unit of Measure
Wheat	\$5.50	bushel
Corn	\$3.70	bushel
Grain Sorghum	\$3.95	bushel
Barley	\$4.95	bushel
Oats	\$2.40	bushel
Long Grain Rice	\$14.00	hundredweight
Medium Grain Rice	\$14.00	hundredweight
Soybeans	\$8.40	bushel
Other Oilseeds	\$20.14	hundredweight
Peanuts	\$535.00	ton
Dry Peas	\$11.00	hundredweight
Lentils	\$19.97	hundredweight
Small Chickpeas	\$19.04	hundredweight
Large Chickpeas	\$21.54	hundredweight
Seed Cotton	\$0.367	pound

Price Loss Coverage (PLC)

- Recall:
 - **PLC Payment** = 0.85 × Base Acres × **Payment Yield**
× **PLC Payment Rate**
 - where:
 - **PLC Payment Rate** = [Ref. Price – NMYAP/MLR]
 - Base Acres = average acres of each program crop historically grown on a farm at first enrollment years ago
 - **Payment Yield** = Historical average yield for program crops grown on an FSA farm
 - If choose PLC, **can** purchase SCO “shallow loss” crop insurance

ARC-CO Program

- Recall ARC-CO program:
 - Payments when **Actual County Revenue** < **County ARC Revenue Guarantee (CARG)**
 - Where:
 - **CARG** = 86% x **County Benchmark** (i.e., a revenue benchmark)
 - **County Benchmark** = 5-yr Olympic Ave. County Yield x 5-year Olympic Ave. NMYAP (i.e., like county average revenue)
 - **Actual County Rev.** = Actual County Yield x NMYAP
 - **ARC Payment Rate** = CARG – Actual County Rev
 - (up to 10% of county benchmark – “cap on ARC payment rate”)
 - **ARC Payment** = 85% x Base Acres x **ARC Payment Rate**

ARC-CO Program

- County ARC varies by county, PLC does not
- Not eligible for SCO
- Main idea: like county-level revenue insurance (e.g., ARPI), with an 86% coverage level
- Difference from Crop Insurance:
 - Uses 5-Year Olympic Average prices and county yields to determine guarantee (rather than APH)
 - Uses national marketing year average price as the actual price (rather than futures market prices)

Participation in NC

- Should I choose ARC-CO, ARC-I, or PLC?
- Historical participation in NC:

Crop	% Farms Electing PLC	% Farms Electing ARC-CO	% Farms Electing ARC-I
Corn	4%	96%	0%
Soybeans	3%	97%	0%
Wheat	17%	83%	0%
Sorghum	12%	88%	0%
Peanuts	99%	1%	0%

Source: USDA FSA data

Commodity Programs

- Important considerations:
 - **Expected returns** from ARC-CO vs PLC
 - Depends on individual expectations on prices and yields
 - **Coverage preference**
 - Revenue vs price protection
 - **Payment caps & limits**
 - ARC-CO limit at 10% of average county revenue; PLC is loan rate
 - \$125,000 payment limit on all payments from commodity programs
 - Preference for **SCO** “shallow loss” coverage
 - With ARC-CO, you cannot purchase SCO, but with PLC you can
 - **Wait to enroll** near deadline - reduce uncertainty

Decision Tools

- Two simulation-based decision tools available:
 - U. of Illinois: <https://fd-tools.ncsa.illinois.edu/>
 - Texas A&M: <https://www.afpc.tamu.edu/tools/farm/farbill/2018/>
- Illinois:
 - Focus on corn, soybeans, and wheat
 - 5 year payment estimates using 1000 model runs
- Texas A&M:
 - All commodity crops
 - 1 (or 2) year payment estimates using 500 model runs

Illinois Estimates

- Corn, Pasquotank County

State: North Carolina

County: Pasquotank

Crop: Corn Reference Price: \$ 3.7

Forecast Model: Forecast

PLC Payment Yield*: 178 Bu/acre

ARC Yield Yield*: 1.45 Bu/acre

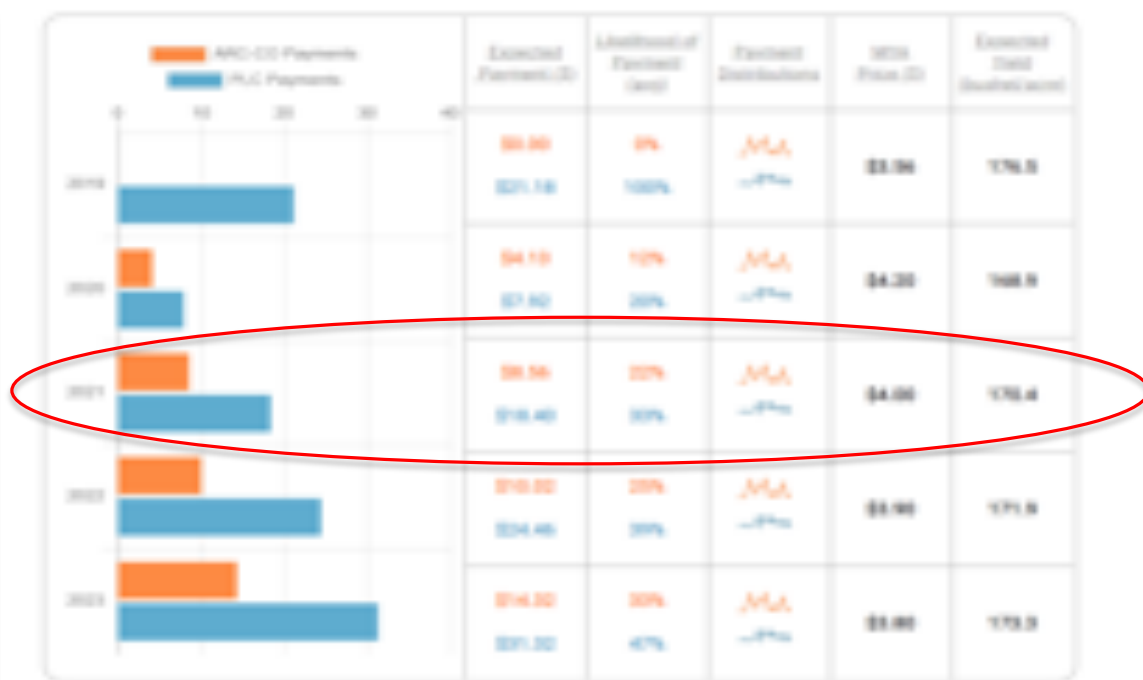
ARC/PLC Program Inputs

ARC Coverage Level: 85 %

ARC Coverage Range: 10 %

Payment Acres: 85 %

RUN MODEL



Model data last updated: Jan 13, 2021

2016 numbers are actual values of ARC/PLC payments. All 2019 yields and prices are final

Illinois Estimates

- Corn, Chowan County

State
North Carolina

County
Chowan

Crop
Corn Reference Price
\$ 3.7

Forecast Model
Forecast

PLC Payment Field¹
Y58 Sulfate

ARC Trend Field²
1.48 Sulfate

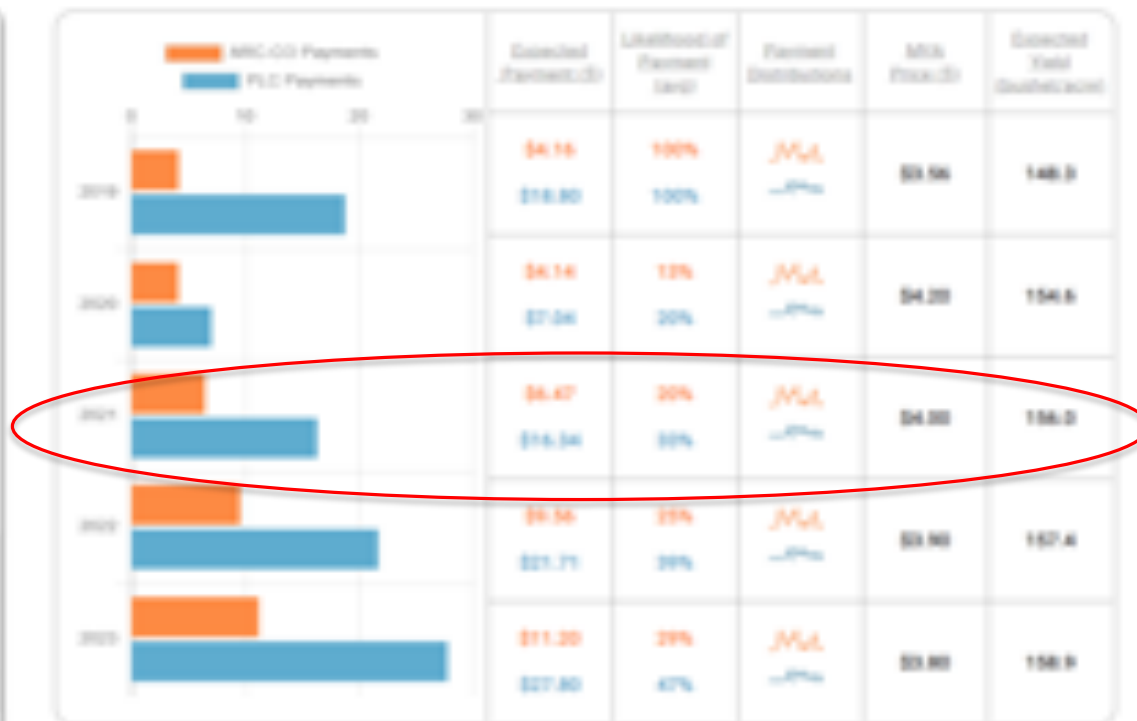
ARC/PLC Program Inputs

ARC Coverage Level 85 %

ARC Coverage Range 10 %

Payment Acres 85 %

RUN MODEL



Model data last updated Jan 5, 2021

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

Illinois Estimates

- Corn, Gates County

State: North Carolina

County: Gates

Crop: Corn Reference Price: \$ 3.7

Forecast Model: Forecast

PLC Payment Yield*: 154 Bu/Acre

ARC Yield Yield*: 1.31 Bu/Acre

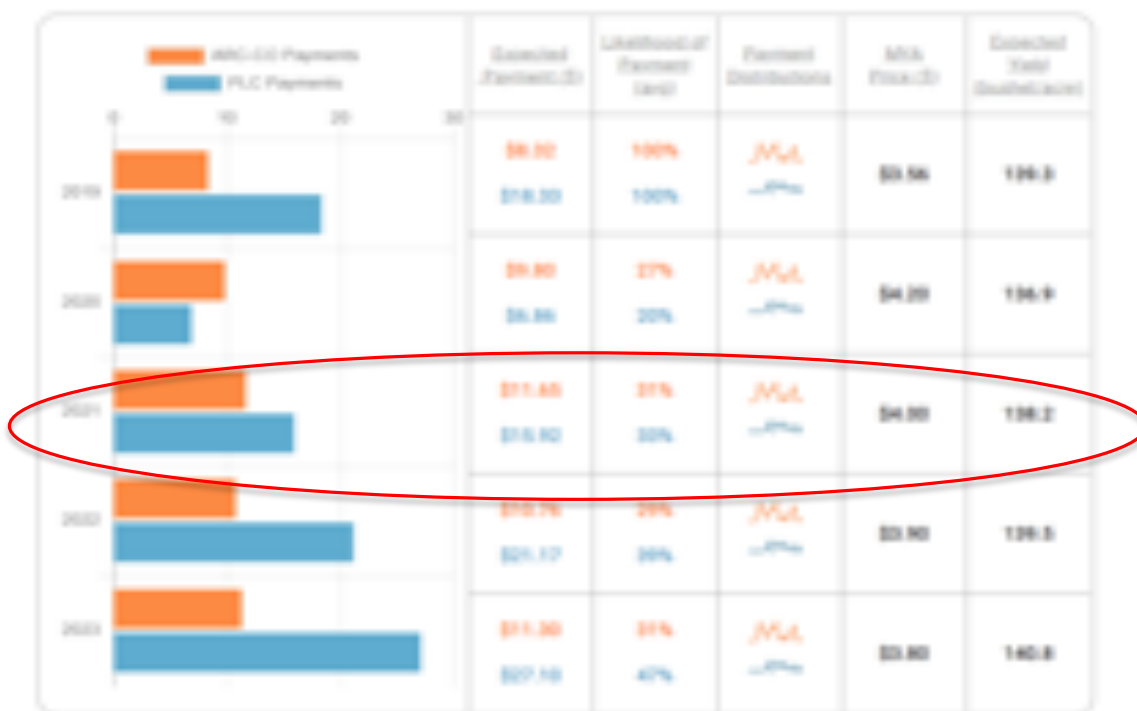
ARC/PLC Program Inputs

ARC Coverage Level: 85 %

ARC Coverage Range: 10 %

Payment Acres: 85 %

RUN MODEL



Model data last updated: Jan 9, 2021

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

Illinois Estimates

- Soybeans, Pasquotank County

State: North Carolina

County: Pasquotank

Crop: Soybeans Reference Price: \$ 5.4

Forecast Model: Forecast

PLC Payment Yield*: 47 bush/acre

ARC Trend Yield*: 0.29 bush/acre

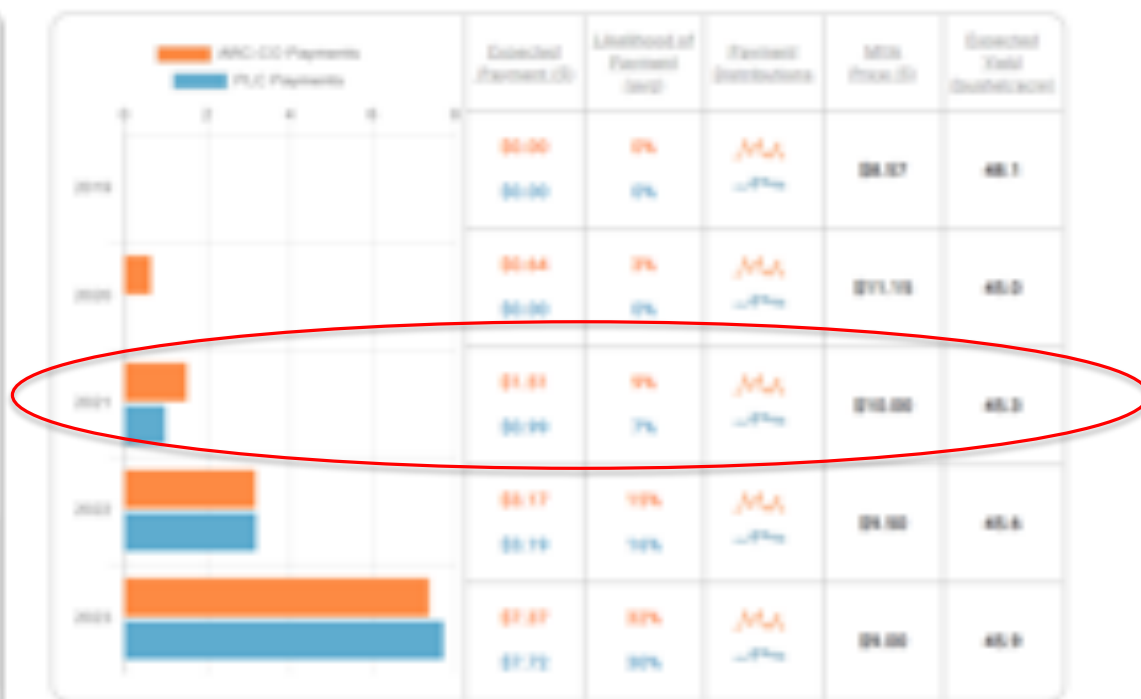
ARC/PLC Program Inputs

ARC Coverage Level: 86 %

ARC Coverage Range: 10 %

Payment Acres: 83 %

RUN MODEL



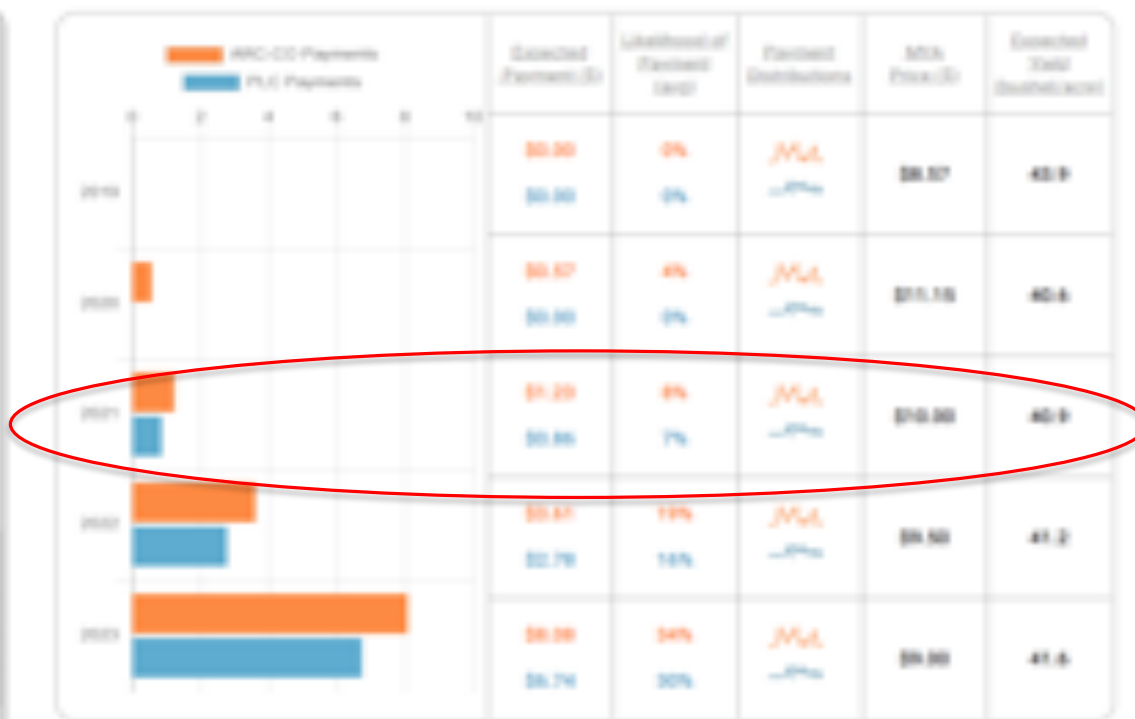
Model data last updated: Jan 5, 2021

2018 numbers are actual values of ARC/PLC payments. All 2019 yields and prices are final.

Illinois Estimates

- Soybeans, Chowan County

State: **North Carolina**
 County: **Chowan**
 Crop: **Soybeans** Reference Price: \$ 8.0
 Forecast Model: **Forecast**
 PLC Payment Yield*: **41** bu/acre
 ARC Yield Yield*: **0.22** bu/acre
ARC/PLC Program Inputs
 ARC Coverage Level: 85 %
 ARC Coverage Range: 10 %
 Payment Acres: 85 %
RUN MODEL



Model data last updated: Jan 5, 2021

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

Illinois Estimates

- Soybeans, Gates County

State: **North Carolina**

County: **Cates**

Crop: **Soybeans** Reference Price: \$ 6.4

Forecast Model: **Forecast**

PLC Payment Year*: **41** (20/2020)

ARC Yield Year*: **0.31** (20/2020)

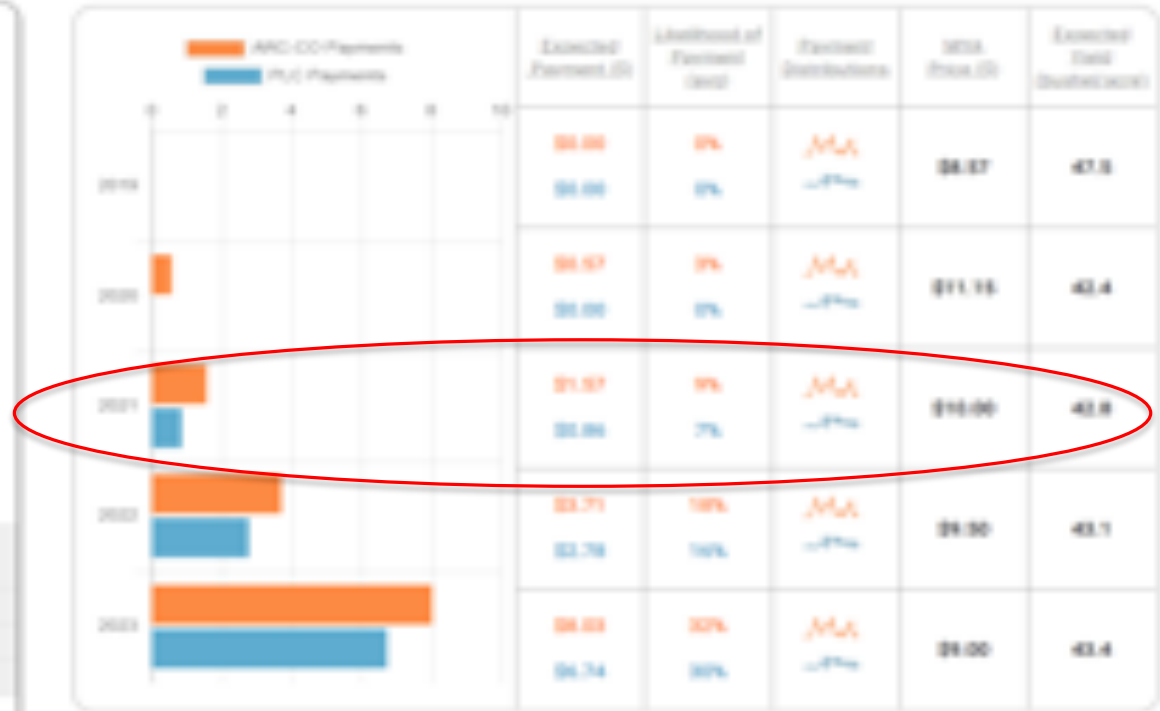
ARC/PLC Program Inputs

ARC Coverage Level: **66 %**

ARC Coverage Range: **10 %**

Payment Acres: **35 %**

RUN MODEL



Model data last updated: Jan 5, 2021

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

Illinois Estimates

- Wheat, Pasquotank County

State: **North Carolina**

County: **Pasquotank**

Crop: **Wheat** Reference Price: \$ 5.5

Forecast Model: **Forecast**

PLC Payment Yield*: **43** \$a/bcrb

ARC Yield Yield*: **0.52** \$a/bcrb

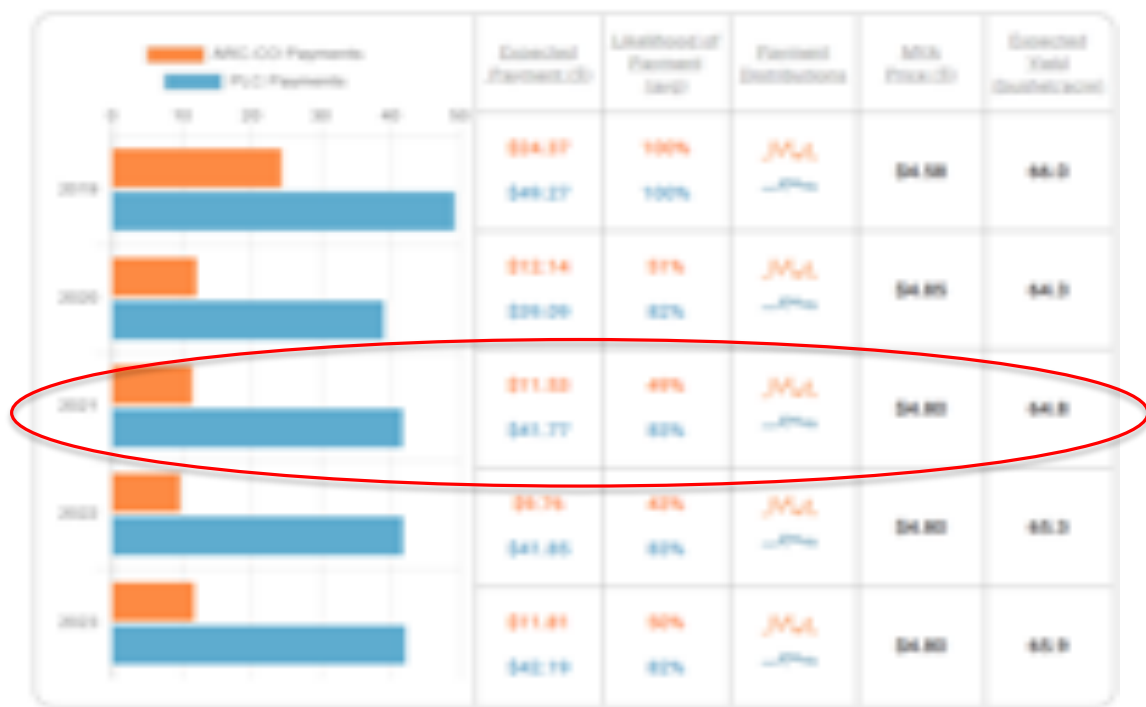
ARC/PLC Program Inputs

ARC Coverage Level: **85 %**

ARC Coverage Range: **10 %**

Payment Acres: **80 %**

RUN MODEL



Model data last updated: Jan 9, 2021

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

Illinois Estimates

- Wheat, Chowan County

State: **North Carolina**

County: **Chowan**

Crop: **Wheat** Reference Price: \$ 5.5

Forecast Model: **Forecast**

PLC Payment Yield*: **58** Bu/acre

ARC Total Yield*: **0.51** Bu/acre

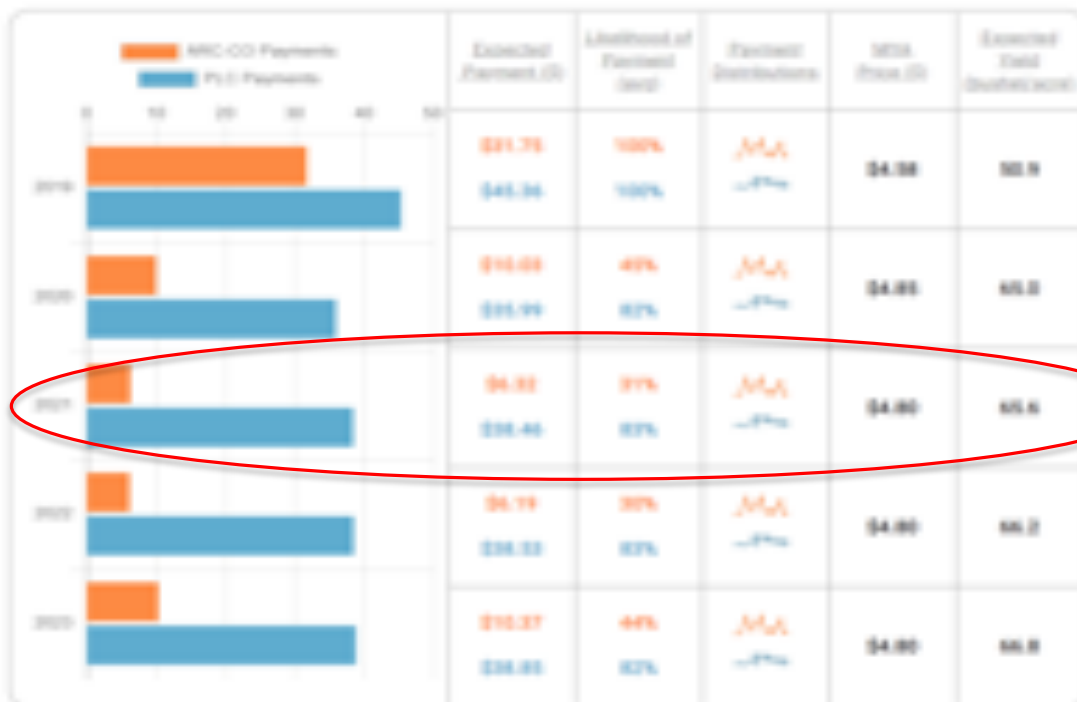
ARC/PLC Program Inputs

ARC Coverage Level: 85%

ARC Coverage Range: 10%

Payment Acres: 85%

RUN MODEL



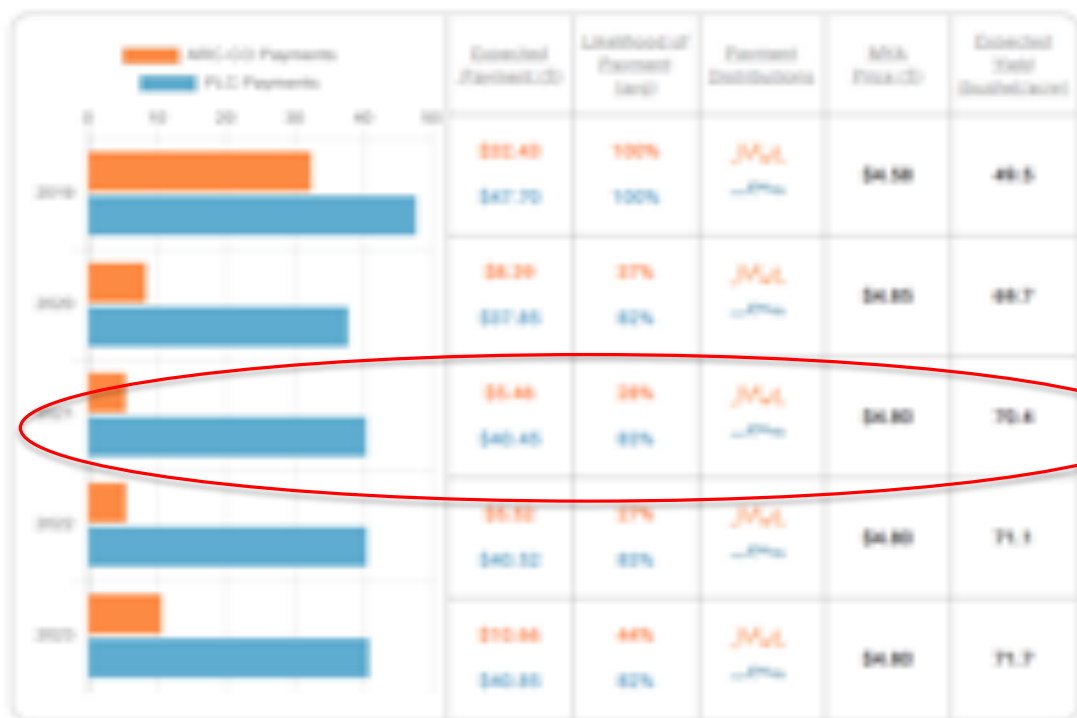
Model data last updated: Jan 5, 2021

2018 numbers are actual values of ARC/PLC payments. All 2019 yields and prices are final.

Illinois Estimates

- Wheat, Gates County

State: **North Carolina**
 County: **Gates**
 Crop: **Wheat** Reference Price: \$ 5.5
 Forecast Model: **Forecast**
 PLC Payment Yield*: **61**
 ARC Threshold*: **0.66**
ARC/PLC Program Inputs
 ARC Coverage Level: 86 %
 ARC Coverage Range: 10 %
 Payment Acres: 81 %
RUN MODEL



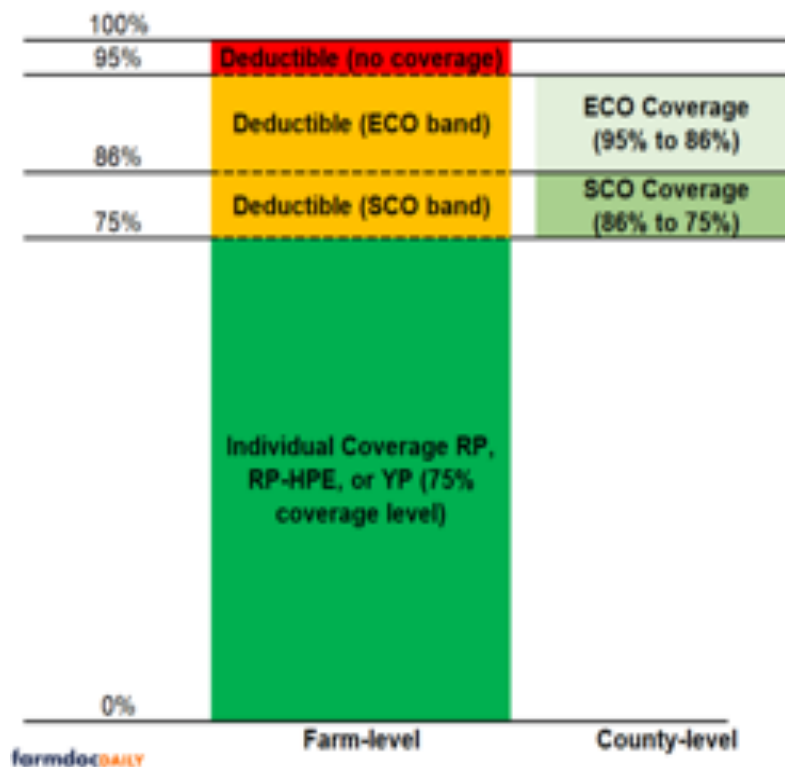
Model data last updated: Jan 3, 2021

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

Crop Insurance Update

- Enhanced Coverage Option (ECO)
 - Additional coverage of deductible for 95%-86% (or 90% to 86%)
 - County-trigger, 44% subsidy
- Sales Closing Date
 - Corn & Soybeans: Feb 28, 2020

Figure 1. Illustration of ECO, SCO, and 75% Individual Coverage



Take Home Messages

- **Take note of sign-up deadlines**
 - March 15, 2021
 - Choice will apply only for 2021 crop year
 - Can change choice in 2022 and 2023
- **Choice between ARC-CO & PLC largely depends on yield and price expectations**
 - Most analysis point to PLC for corn and ARC-CO for soybeans* for Eastern NC counties
 - Probabilities of payment for both are generally low (soy)*
 - Analysis is based on forecasts – still a long way out
 - NMYAP for 2021 crop year not established till Sept/Oct 2022



Thank you!

- **Questions?**

- **Contact: *Rod M. Rejesus, NC State University***

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- Email: rod_rejesus@ncsu.edu

- **Websites:**

- **Agricultural Policy and Farm Bill Extension Website at NC Dept. of Ag. & Resource Economics:**

- <https://cals.ncsu.edu/are-extension/policy-and-regulation/agricultural-policy-and-farm-bill/>

- **FSA website:**

- https://www.fsa.usda.gov/programs-and-services/arcplc_program/index

Illinois Estimates

- Corn, Camden County

State: North Carolina

County: Camden

Crop: Corn Reference Price: \$ 3.7

Forecast Model: Forecast

PLC Payment Yield*: 187 Buckacre

ARC Total Yield*: 1,400 Buckacre

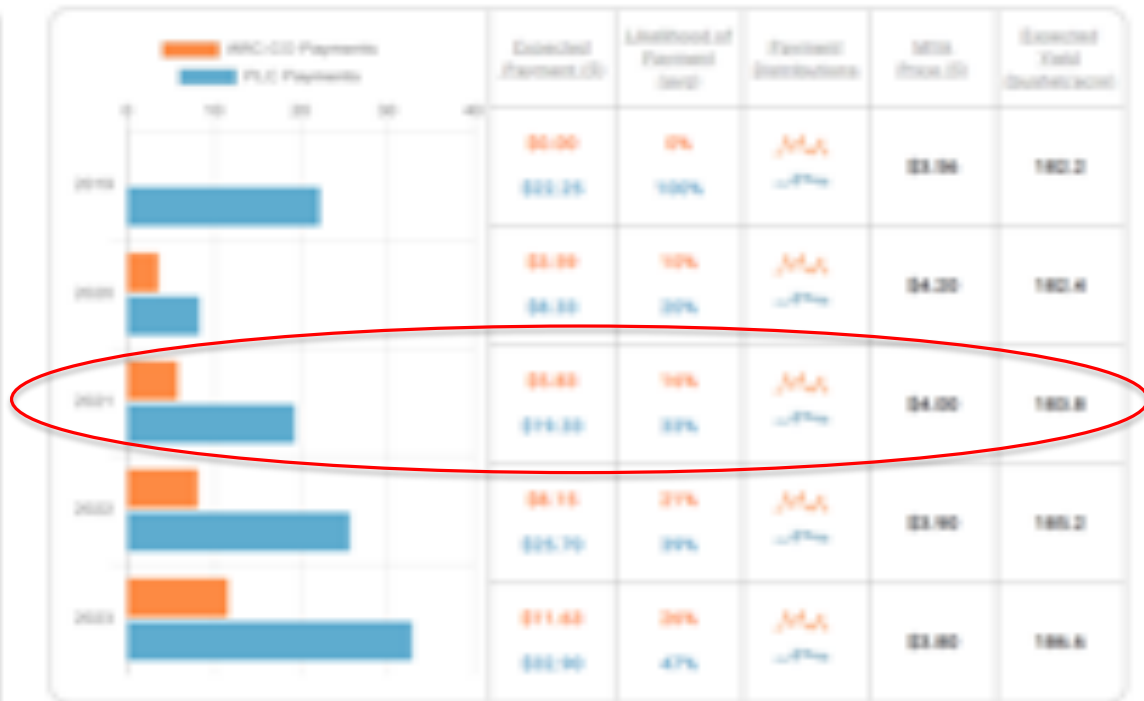
ARC/PLC Program Inputs

ARC Coverage Level: 85 %

ARC Coverage Range: 10 %

Payment Acres: 82 %

RUN MODEL



Model data last updated: Jan 5, 2021

2018 numbers are actual values of ARC/PLC payments. All 2019 yields and prices are final.

Illinois Estimates

- Corn, Currituck County

State: **North Carolina**

County: **Currituck**

Crop: **Corn** Reference Price: \$ 3.7

Forecast Model: **Forecast**

PLC Payment Yield: **173** (Dollars)

ARC Yield Yield: **1.43** (Dollars)

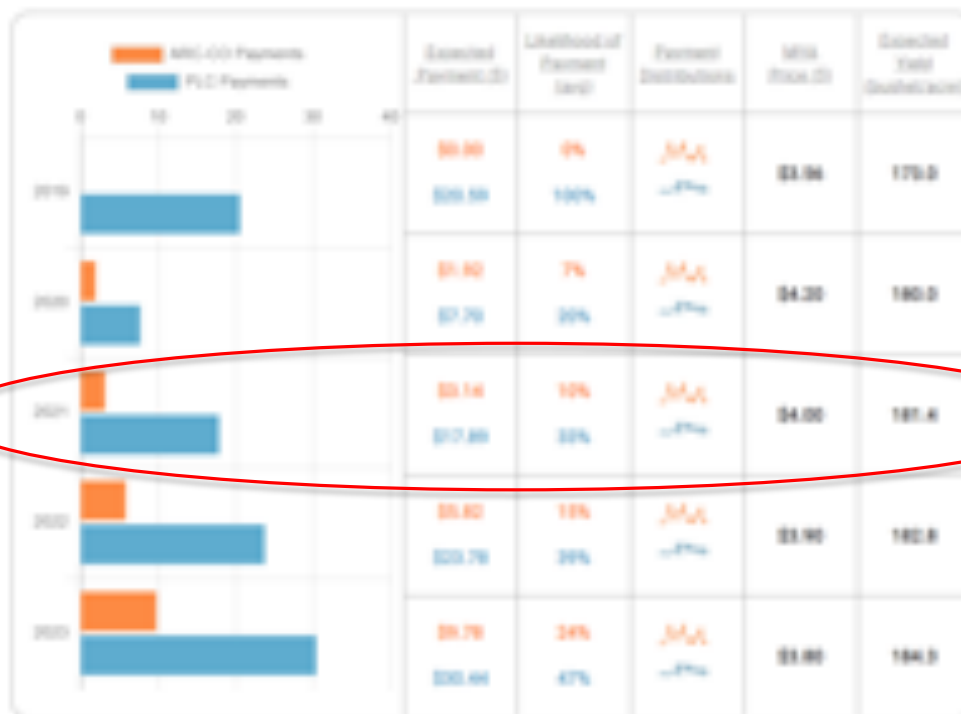
ARC/PLC Program Inputs

ARC Coverage Level: 88 %

ARC Coverage Range: 10 %

Payment Acres: 81 %

RUN MODEL



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Illinois Estimates

- Soybeans, Camden County

State
North Carolina

County
Camden

Crop
Soybeans Reference Price \$ 9.4

Forecast Model
Forecast

PLC Payment Rate*
47 %

ARC Threshold*
0.32

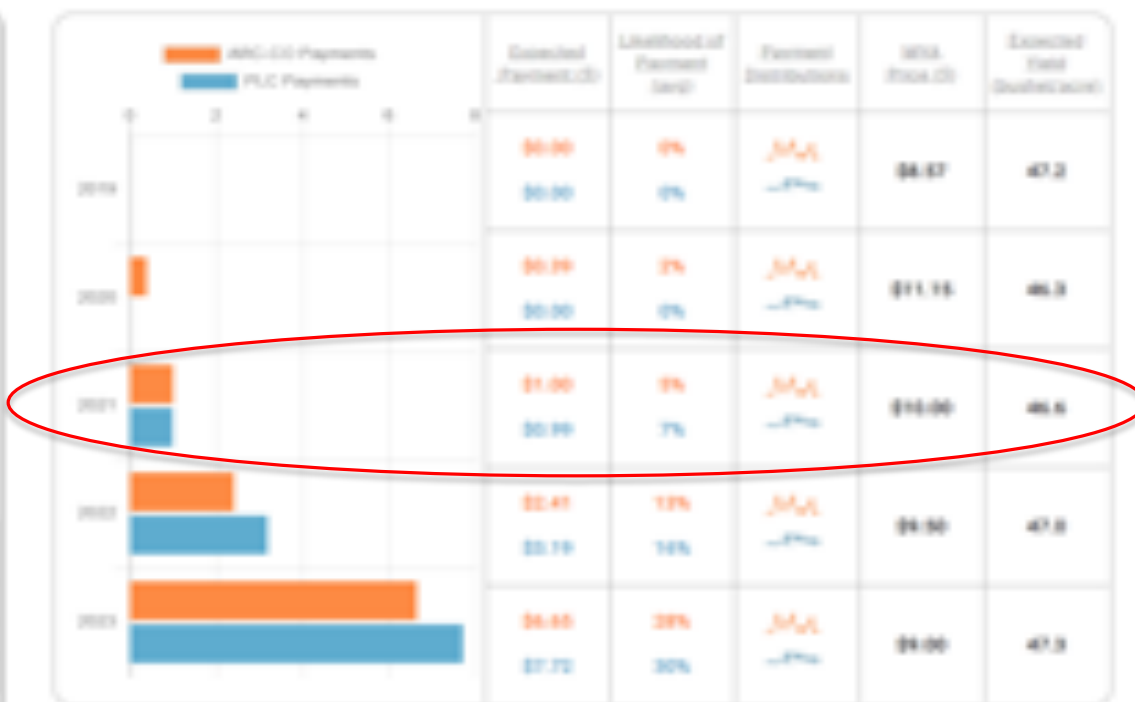
ARC/PLC Program Inputs

ARC Coverage Level 80 %

ARC Coverage Range 10 %

Payment Acres 81 %

RUN MODEL



Model data last updated: Jan 5, 2021

2018 numbers are actual values of ARC/PLC payments. All 2019 yields and prices are final.

Illinois Estimates

- Soybeans, Currituck County

State: **North Carolina**

County: **Currituck**

Crop: **Soybeans** Reference Price: \$ 3.4

Forecast Model: **Forecast**

PLC Payment Yield: **42** (bu/acre)

ARC Threshold Yield: **0.23** (bu/acre)

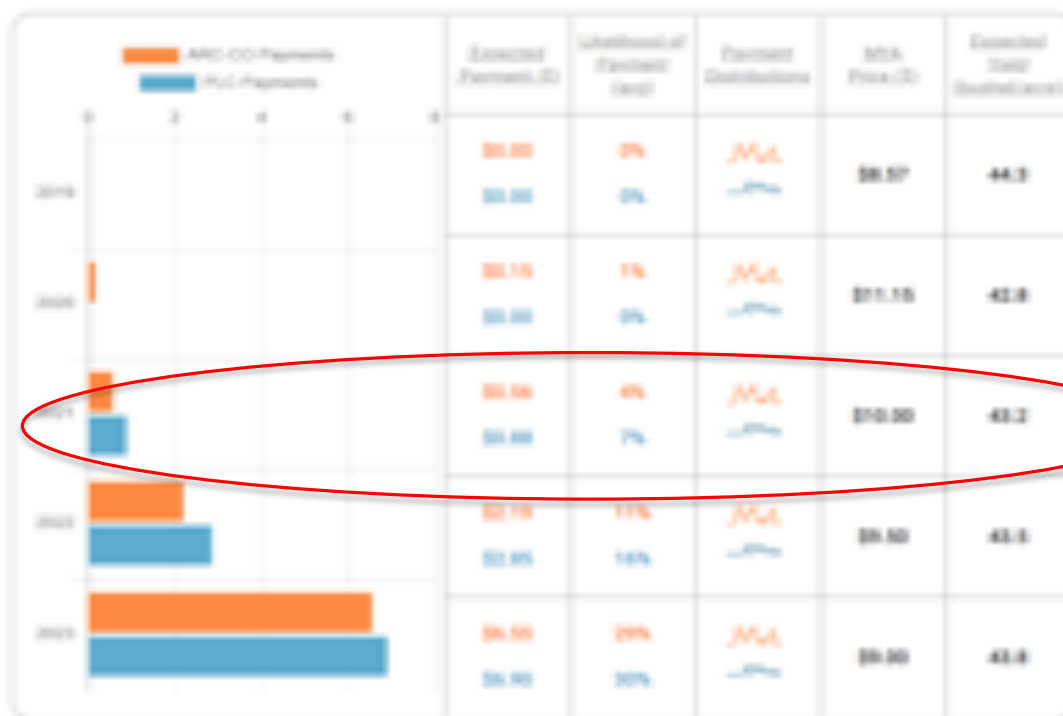
ARC/PLC Program Inputs

ARC Coverage Level: 86 %

ARC Coverage Range: 10 %

Payment Acres: 83 %

RUN MODEL



Model data last updated: Jan 5, 2021

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

Illinois Estimates

- Wheat, Camden County

State
North Carolina

County
Camden

Crop
Wheat Reference Price
\$ 5.5

Forecast Model
Forecast

PLC Payment Yield*
85 Bu/acre

ARC Yield Yield*
0.37 Bu/acre

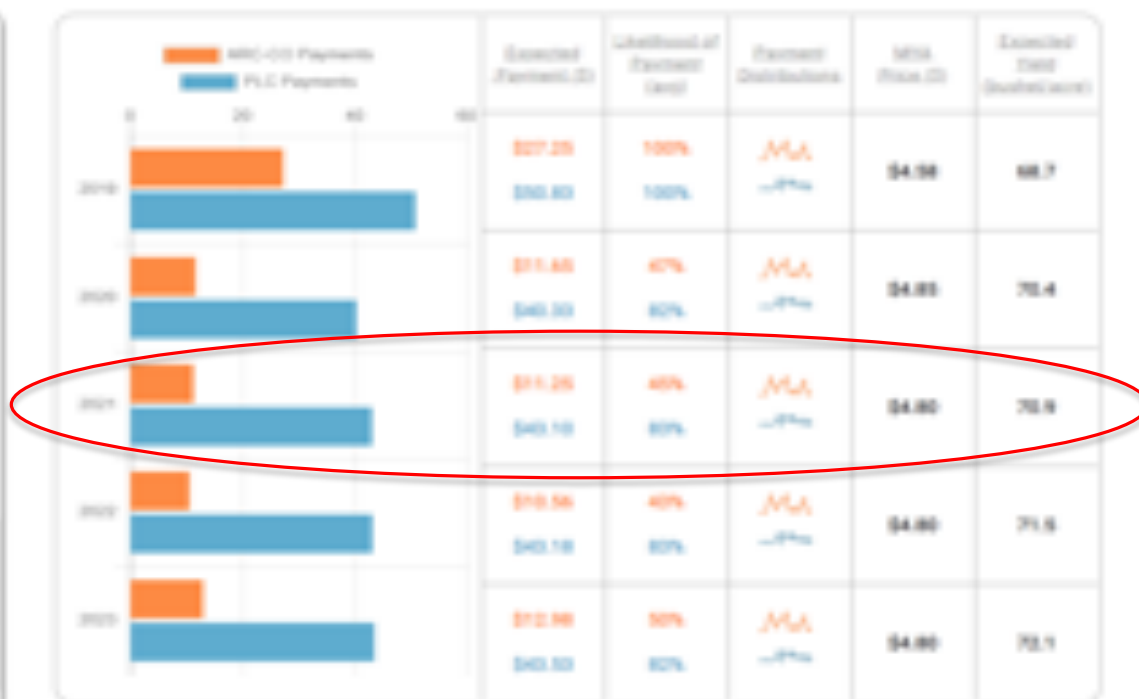
ARC/PLC Program Inputs

ARC Coverage Level 85 %

ARC Coverage Range 10 %

Payment Acres 85 %

RUN MODEL



Model data last updated: Jan 3, 2021

2016 numbers are actual values of ARC/PLC payments. All 2019 yields and prices are final.

Illinois Estimates

- Wheat, Currituck County

State
North Carolina

County
Currituck

Crop
Wheat Reference Price
\$ 5.5

Forecast Model
Forecast

PLC Payment Rate*
60 %

ARC Tax Rate*
0.47

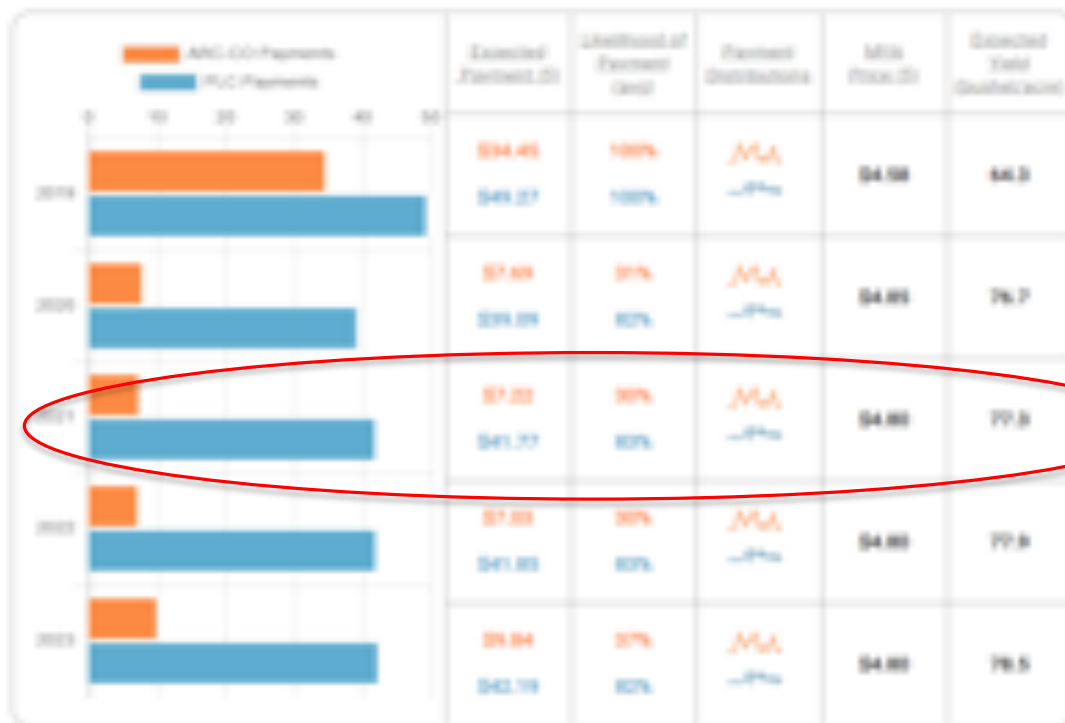
ARC/PLC Program Inputs

ARC Coverage Level 80 %

ARC Coverage Range 10 %

Payment Acres 80 %

RUN MODEL



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