

**Computing the PLC and ARC Safety Net Payments in the 2018 Farm Bill**

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This publication discusses the payment calculations for the Price Loss Coverage (PLC) and Agriculture Risk Coverage (ARC) programs along with changes to these formulas in the 2018 Farm Bill. For ARC/PLC program eligibility information and guidance on the decision process, please see UGA publications AGECON-19-12PR and AGECON-19-14PR, available at <https://agecon.uga.edu/extension/policy.html>.

**Price Loss Coverage (PLC) Program**

The PLC program provides price support by triggering payments when producers face prices below a threshold. A PLC payment is made when the marketing year average (MYA) price for a covered commodity is less than the Effective Reference Price (ERP) of that crop, as established by the 2018 Farm Bill. When PLC payments are triggered, the PLC payment rate is the difference between the ERP and the higher of the MYA price or the Marketing Assistance Loan Rate (also established by the 2018 Farm Bill) for a particular crop. The total PLC Payment is based on the Farm Serial Number (FSN) PLC Payment Yield and is received on 85% of base acres of the covered commodity.

The PLC Payment Rate for a Title I covered commodity follows the formula shown below.

Effective Reference Price	
- MYA Price or Loan Rate	→ Use MYA Price when it is <u>greater than</u> the Loan Rate, otherwise use the Loan Rate.
= <b>PLC Payment Rate</b>	

Next, the PLC Payment is multiplied by three additional pieces of information as shown below.

× PLC Payment Rate	→ Calculations shown above.
× PLC Payment Yield	→ PLC Payment Yield established from 2014 Farm Bill will apply for the 2019 crop year. Thereafter, the updated PLC Payment Yield in the 2018 Farm Bill will be used, if an update is chosen by the farm.
× Base Acres	
× 0.85	
= <b>PLC Payment</b>	

\*These authors contributed equally to this publication.

The annual PLC payment rate is published by the USDA Farm Service Agency (FSA) after the end of each applicable 12-month marketing year for each covered commodity. However, projections of the payment rate are provided monthly during the marketing year based on prices paid to farmers and that particular crop's weekly marketing quantity. The most recent MYA price estimates and projected PLC payment rates for covered commodities are available on the FSA website ([https://www.fsa.usda.gov/programs-and-services/arcplc\\_program/arcplc-program-data/index](https://www.fsa.usda.gov/programs-and-services/arcplc_program/arcplc-program-data/index)) under the heading for "Program Year Specific Data."

### Changes in the PLC Program

#### *Effective Reference Price (ERP):*

The 2018 Farm Bill created a new ERP to act as an escalator to the statutory reference price when MYA prices increase. The ERP is not expected to be higher than the statutory reference price for Georgia grown commodities during the first few years of the 2018 Farm Bill; but the ERP might become higher than the statutory reference price in later years if the MYA price of a covered commodity sustains price increases over multiple years. An in-depth explanation and method of calculation for the ERP is detailed in UGA publication AGECON-19-02PR available at <https://agecon.uga.edu/extension/policy.html>.

#### *PLC Payment Yield:*

Landowners of farms with base acres have a one-time opportunity to update their PLC payment yields that takes effect beginning with the 2020 crop year. PLC payment yield updates are based on the producer's average yield per planted acre in crop years 2013-2017. Only landowners with a PLC payment yield that increases should choose to update, thus total PLC payments at a given payment rate will increase. That said, the overall impact across commodities in Georgia should be minimal as the base period for PLC payment yields under the 2014 farm bill was 2008-2012, and most producers have not had substantial increases in yield during the latter period. An in-depth discussion of the calculation for the PLC yield update, including examples relevant to Georgia, is detailed in UGA publication AGECON-19-10PR, available at <https://agecon.uga.edu/extension/policy.html>.

### **Agricultural Risk Coverage (ARC)**

The 2018 Farm Bill reauthorizes the ARC-County and ARC-Individual programs for the 2019 to 2023 crop years. These programs are revenue-based programs that depend on price and yield outcomes. These programs provide income support payments when actual crop revenue declines below a guarantee level. Under situations where either price or yield suffer a loss, then payments may be triggered. This publication focuses solely on the ARC-County program, as only one one-hundredth of one percent of GA base acres chose ARC-Individual coverage during the 2014 Farm Bill.

An ARC-County payment is based on a benchmark revenue and its relationship to actual revenue in a given county. ARC-County payments are received on 85% of the base acres of the covered commodity. If a county's Actual Revenue for a covered commodity is less than the county's ARC Guarantee for a particular crop, a payment is made for the difference.

**Compute the Benchmark Revenue and ARC Guarantee**

	5-Year Olympic Average Yield for a County <sup>1</sup>	
x	5-Year Olympic Average of MYA Price <sup>2,3</sup>	
=	<b>ARC Benchmark Revenue</b>	
x		0.86
=	<b>ARC Guarantee</b>	

**Compute the Actual Revenue**

	Average County Yield	
x	MYA Price or Loan Rate	→ Use MYA Price when it is <u>greater than</u> the Loan Rate, otherwise use the Loan Rate.
=	<b>Actual Revenue</b>	

**Compare ARC Guarantee to Actual Revenue to Compute ARC Payment**

The **ARC Payment Rate** is the lower value between the following two calculations:

<b>ARC Guarantee – Actual Revenue</b>	<b>0.10 × ARC Benchmark Revenue</b>
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	ARC Payment Rate	
x	Base Acres	
x		0.85
=	<b>ARC Payment</b>	

<sup>1</sup>5-Year Olympic Average Yield for a County is the olympic average county yield of the covered commodity for the most recent 5 crop years of available data or 80% of the county Transitional yield, whichever is higher each year. It is calculated as dropping the highest and lowest yields and averaging the remaining three yields. This is also referred to as the Benchmark Yield.

<sup>2</sup>5-Year Olympic Average of MYA Price is the olympic average MYA price of the covered commodity for the most recent 5 crop years of available data. It is calculated as dropping the highest and lowest prices and averaging the remaining three prices. This is also referred to as the Benchmark Price.

<sup>3</sup>If the MYA price for any given year is lower than the Effective Reference Price, the Effective Reference Price will be used to calculate the 5-Year Olympic Average of MYA Price.

The USDA is required to publish the Average County Yield, and the final MYA price for each county and each covered commodity after the end of the applicable 12-month marketing year. Thus, the Actual Revenue is not known until after the end of the marketing year for each crop in each county; but the Benchmark Yield, Benchmark Price, maximum payment rate, and most recent MYA price estimates are available at the beginning of the marketing year on the FSA website ([https://www.fsa.usda.gov/programs-and-services/arcplc\\_program/arcplc-program-data/index](https://www.fsa.usda.gov/programs-and-services/arcplc_program/arcplc-program-data/index)) under the heading for “Program Year Specific Data”.

## Changes in the ARC Program

The 2018 Farm Bill made several changes to the ARC-County program, including (1) make payments based on the payment rate of the county where the base acres of the farm are physically located; (2) increase the transitional yield plug to 80 percent; (3) utilize the ERP to calculate the guarantee; (4) calculate a separate irrigated and non-irrigated yield in each county; and (5) prioritize RMA data in the calculation of the guarantee and actual yields. Here we further discuss each of these changes.

### *County Location:*

In the 2014 Farm Bill, ARC-County payments were based on the administrative county of the farm. For farms that were located across multiple counties, the calculation and payment was based on the administrative location of the county. The 2018 Farm Bill changed this language. Beginning with the 2019 crop year, calculations and payments are to be based on the physical location of the farm. For farms that are located in multiple counties, these farms are to be prorated with payments based on the acres located in each physical county.

### *Transitional Yield:*

As payments are calculated, the Olympic Average Yield requires using the actual yield for that particular county or a percentage of the county transitional yield, whichever is higher each year. A transitional yield (or T-yield) is the maximum average production per acre that is assigned to a particular crop in a particular county. Under the 2014 Farm Bill, the Olympic Average Yield computation was based on the higher of actual yields or a plug yield of 70% of the county T-yield. This plug yield is designed to protect against abnormally low county yields. The 2018 Farm Bill increases the plug to 80% of the T-yield, thus increasing the yield floor used for calculation of the Olympic Average Yield. This allows for a potentially higher benchmark revenue and ARC guarantee, thus possibly increasing ARC-County payments. T-yields are available on the FSA website [https://www.fsa.usda.gov/programs-and-services/arcplc\\_program/arcplc-program-data/index](https://www.fsa.usda.gov/programs-and-services/arcplc_program/arcplc-program-data/index) under the heading "Non-Program Year Specific Data".

### *Effective Reference Price (ERP):*

The Olympic Average price computed as part of the 2014 Farm Bill used the higher of the MYA price or the Reference Price for each year. The 2018 Farm Bill establishes an ERP. The ERP replaces the use of the Reference Price in the ARC-County calculation. Thus, the Olympic Average price will be computed as the higher of the MYA or the ERP. This allows for a potentially higher benchmark revenue and ARC guarantee, thus possibly increasing ARC-County payments. An in-depth explanation and method of calculation for the ERP is detailed in UGA publication AGECON-19-02PR available at <https://agecon.uga.edu/extension/policy.html>.

### *Irrigated and Non-irrigated Yields:*

ARC-County payments in the 2014 Farm Bill had been calculated separately using both irrigated and non-irrigated crop yields. This was done only when a county had at least an average of 25 percent of a covered commodity's planted and considered planted acreage that was irrigated from 2009 through 2012 and at least an average of 25 percent of the same covered commodity was non-irrigated during the same period. The 2018 Farm Bill calls for separate irrigated and non-irrigated calculations if during the 2013 to 2017 crop years the county has farms with irrigated and non-irrigated planted and considered planted acreage

of a covered commodity. This will increase the number of counties that will have separate irrigated and non-irrigated yields used in calculating ARC-County payments making payments more consistent with a farm's production practices.

*RMA Data Prioritization:*

Risk Management Agency (RMA) data has been primarily used by the FSA when calculating ARC-County payments, however, the necessary data has not always been available from RMA. The 2018 Farm Bill provides guidance to the Secretary of Agriculture to prioritize RMA data but also allows for the utilization of yield information from the National Agricultural Statistics Service (NASS) and other sources determined by the FSA State Committee.

*Trend Adjusted Yield:*

One of the components of the benchmark revenue is the Olympic average yield, or benchmark yield. In calculating this yield, FSA must use a trend-adjusted yield in a fashion similar to what RMA uses for the crop insurance program. This is intended to account for long-term increases in production that are not otherwise captured in the ARC-County calculations.

## **Summary**

The 2014 Farm Bill contained significant changes to the Title I commodity programs for row crops. With the passage of the 2018 Farm Bill, there are relatively minor changes that have been added to help support existing farm safety net programs. Understanding the changes to the calculations for ARC and PLC is important to farmers who benefit from these programs as part of a risk management strategy to protect against declining prices and/or revenue.

This publication details the calculations of the ARC and PLC programs. Additional publications focusing on eligibility of these programs (UGA publication AGECON-19-12PR), and the decision process (UGA publication AGECON-19-14PR), are available at <https://agecon.uga.edu/extension/policy.html>.

## **References**

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### **Acknowledgments**

Appreciation is expressed to Gopinath Munisamy and Amanda R. Smith for input and review of this Factsheet. Any remaining errors are those of the authors. Yangxuan Liu acknowledges the funding support from the Georgia Cotton Commission for this publication.



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**AGECON-19-13PR**

**November 12, 2019**

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