

Estimated ARC and PLC Payments for 2016 Covered Commodities

Don Shurley and Adam N. Rabinowitz
Department of Agricultural and Applied Economics
University of Georgia

The 2014 farm bill eliminated the DCP (Direct and Countercyclical Payment) Program of the 2002 and 2008 farm bills. In the 2014 farm bill, DCP was replaced by ARC (Agricultural Risk Coverage) and PLC (Price Loss Coverage). Producers had to select either ARC or PLC for all “covered commodities” on a farm-by-farm, crop-by-crop basis.

Covered commodities commonly found on Georgia farms include barley, canola, corn, grain sorghum, oats, peanuts, sesame seed, soybeans, sunflowers, and wheat. Cotton is not a covered commodity and not eligible for ARC or PLC.

ARC and PLC payments are made on 85% of the farms (FSN) base acres of the crop including any acres of the crop planted and assigned temporarily to the farms Generic Base (2008 farm bill cotton base). All peanut base acres in Georgia are enrolled in PLC (less than .1% enrolled in ARC). With the exception of canola, at least 70% of base of all other covered commodities is enrolled in ARC.

**2014 Farm Bill Base Acres and ARC/PLC Program Election¹
of Covered Commodities in Georgia**

	2014 Farm Bill Base Acres	Enrolled in ARC ²		Enrolled in PLC	
		Acres	Percent of Base	Acres	Percent of Base
Barley	4,493	3,631	80.8	862	19.2
Canola	1,831	994	54.3	837	45.7
Corn	416,621	358,690	86.1	57,931	13.9
Grain Sorghum	50,175	37,974	75.7	12,201	24.3
Oats	44,284	38,724	87.4	5,560	12.6
Peanuts	753,328	478	³	752,849	99.9
Soybeans	139,185	121,637	87.4	17,548	12.6
Sunflowers	2,462	1,804	73.3	658	26.7
Wheat	382,111	283,887	74.3	98,224	25.7

1/ Source: USDA-FSA, http://www.fsa.usda.gov/programs-and-services/arcplc_program/index, ARC/PLC Program, “Other Data”, Table 3.

2/ Total of both ARC-County and ARC-Individual; ARC-Individual equals only 92.5 acres of grain sorghum base, 1.3 acres of oat base, and 296 acres of wheat base.

3/ Less than .1 percent

ARC and PLC payments, if any, are not received until October of the following year after harvest. This is because the price component of ARC and PLC is based on the marketing year for the crop and that is not known until the end of the marketing year. Also, yield data used for ARC are not released by FSA until August or September in the year following harvest.

This delay in payment creates uncertainty in planning and cash flow. Producers may have questions or

need estimates of what ARC and PLC payments will be or are expected to be. There are data and tools available to assist in determining these payments.

PLC

Price Loss Coverage is similar to the Countercyclical Payment in the 2002 and 2008 farm bills. A payment is made when the Market Year Average (MYA) Price for the crop is less than a statutory minimum price. For PLC, this minimum price is known as the Reference Price and a payment is triggered if the MYA Price is less than the Reference Price:

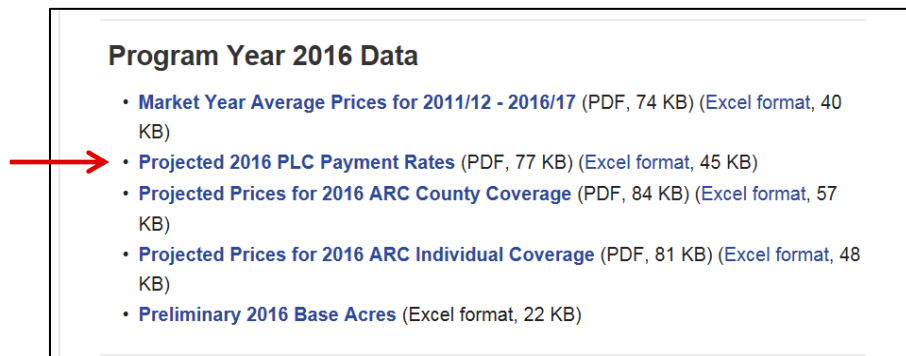
$$\text{PLC Payment Rate} = \text{Reference Price} - \text{MYA Price}^1$$

1/ Higher of the MYA Price or the Loan Rate

The Reference Price was legislated in the 2014 farm bill and fixed for the life of bill. The MYA Price is not known until the end of the marketing year but projections/estimates are provided monthly during the marketing year. The most recent MYA Price estimates and projected 2016 PLC Payment Rates for covered commodities can be found at the following Farm Service Agency (FSA) website:

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

For 2016, on this page scroll down and look under “Program Year 2016 Data” and select the link to “Projected 2016 PLC Payment Rates” in PDF or Excel format.



Shown on the following page is Table 2 in PDF format from this website. Using peanuts as an example, as of June 29, 2017, the MYA Price for peanuts is estimated at 19.7 cents per pound or \$394 per ton. This is less than the Reference Price of 26.75 cents per pound or \$535 per ton. Subtracting the MYA Price from the Reference Price, the difference is 7.05 cents or \$141 per ton.

$$\text{Estimated 2016 PLC Rate} = \$0.2675 - \$0.1970 = \$0.0705 \text{ per lb} = \$141 \text{ per ton}$$

Assuming final MYA Price is \$394 per ton, the PLC payment will be \$141 per ton or 7.05 cents per pound. This will be paid on the farms PLC Payment Yield on 85% of the farms base acres—both permanent base and temporary base earned from acres planted and assigned to Generic Base. For example, if the PLC Yield is 4,100 lbs and the farm (FSN) has 120 acres of peanut base, the PLC Payment would be:

$$4,100 \text{ lbs} \times \$0.0705 \text{ per lb} \times 120 \text{ acres} \times 85\% = \$29,483$$

The payment does not account for any government budget sequestration cuts. A cut of 6.6% is expected but still uncertain at this time. Assuming a 6.6% cut, the actual PLC payment from the above example would be

$$\$29,483 \times (1 - .066) = \$27,437$$

TABLE 2. PROJECTED 2016 PRICE LOSS (PLC) COVERAGE PAYMENT RATES
BASED ON STATUTORY REFERENCE PRICES, PROJECTED 2016/17 MARKET YEAR AVERAGE (MYA) PRICES AND 2016 NATIONAL AVERAGE LOAN RATES
 June 29, 2017 1/

A	B	C	D	E	F	G	H	I	J
Commodity	Marketing Year	Publishing Dates for the Final 2016/17 MYA Price and 2016 PLC Effective Price	Unit	Statutory Reference Price	Projected (P) or Final (F) 2016/17 MYA Price	2016 National Loan Rate	Higher of (F or G) Projected (P) or Final (F) 2016 Effective Price	Higher of (E-H or zero) Projected (P) or Final (F) 2016 PLC Payment Rate	Maximum PLC Payment Rate (I-G)
Wheat	Jun. 1-May 31	June 29, 2017	Bushel	\$5.50	\$3.89 F	\$2.94	\$3.89 F	\$1.61 F	\$2.56
Barley	Jun. 1-May 31	June 29, 2017	Bushel	\$4.95	\$4.96 F	\$1.95	\$4.96 F	\$0.00 F	\$3.00
Oats	Jun. 1-May 31	June 29, 2017	Bushel	\$2.40	\$2.06 F	\$1.39	\$2.06 F	\$0.34 F	\$1.01
Peanuts	Aug. 1-Jul. 31	August 30, 2017	Pound	\$0.2675	\$0.1970 P	\$0.1775	\$0.1970 P	\$0.0705 P	\$0.0900
Corn	Sep. 1-Aug. 31	September 28, 2017	Bushel	\$3.70	\$3.35 P	\$1.95	\$3.35 P	\$0.35 P	\$1.75
Grain Sorghum	Sep. 1-Aug. 31	September 28, 2017	Bushel	\$3.95	\$2.65 P	\$1.95	\$2.65 P	\$1.30 P	\$2.00
Soybeans	Sep. 1-Aug. 31	September 28, 2017	Bushel	\$8.40	\$9.55 P	\$5.00	\$9.55 P	\$0.00 P	\$3.40
Dry Peas	Jul. 1-Jun. 30	September 28, 2017	Pound	\$0.1100	\$0.1100 P	\$0.0540	\$0.1100 P	\$0.0000 P	\$0.0560
Lentils	Jul. 1-Jun. 30	September 28, 2017	Pound	\$0.1997	\$0.2800 P	\$0.1128	\$0.2800 P	\$0.0000 P	\$0.0869
Large Chickpeas	Sep. 1-Aug. 31	November 30, 2017	Pound	\$0.2154	\$0.3150 P	\$0.1128	\$0.3150 P	\$0.0000 P	\$0.1026
Small Chickpeas	Sep. 1-Aug. 31	November 30, 2017	Pound	\$0.1904	\$0.2500 P	\$0.0743	\$0.2500 P	\$0.0000 P	\$0.1161
Sunflower Seed	Sep. 1-Aug. 31	November 30, 2017	Pound	\$0.2015	\$0.1740 P	\$0.1009	\$0.1740 P	\$0.0275 P	\$0.1006
Canola	Jul. 1-Jun. 30	September 28, 2017	Pound	\$0.2015	\$0.1670 P	\$0.1009	\$0.1670 P	\$0.0345 P	\$0.1006
Flaxseed	Jul. 1-Jun. 30	November 30, 2017	Bushel	\$11.284	\$7.950 P	\$5.650	\$7.950 P	\$3.334 P	\$5.634
Mustard Seed	Sep. 1-Aug. 31	November 30, 2017	Pound	\$0.2015	\$0.3100 P	\$0.1009	\$0.3100 P	\$0.0000 P	\$0.1006
Rapeseed	Jul. 1-Jun. 30	November 30, 2017	Pound	\$0.2015	\$0.3000 P	\$0.1009	\$0.3000 P	\$0.0000 P	\$0.1006
Safflower	Sep. 1-Aug. 31	November 30, 2017	Pound	\$0.2015	\$0.2200 P	\$0.1009	\$0.2200 P	\$0.0000 P	\$0.1006
Crambe	Sep. 1-Aug. 31	November 30, 2017	Pound	\$0.2015	\$0.3600 P	\$0.1009	\$0.3600 P	\$0.0000 P	\$0.1006
Sesame Seed	Sep. 1-Aug. 31	November 30, 2017	Pound	\$0.2015	\$0.3200 P	\$0.1009	\$0.3200 P	\$0.0000 P	\$0.1006
Rice (long grain)	Aug. 1-Jul. 31	October 30, 2017	Pound	\$0.1400	\$0.0960 P	\$0.0650	\$0.0960 P	\$0.0440 P	\$0.0750
Rice (med/short grain) /2	Aug. 1-Jul. 31	October 30, 2017	Pound	\$0.1400	\$0.1000 P	\$0.0650	\$0.1000 P	\$0.0400 P	\$0.0750
Rice (temperate japonica)	Oct. 1-Sep. 30	January 31, 2018	Pound	\$0.1610	\$0.1340 P	\$0.0650	\$0.1340 P	\$0.0270 P	\$0.0960

MYA Price=national average price received by producers during the 12-month marketing year.
 Reference price (column E)=statutory price levels apply for crop years 2014-2018.
 1/ F= Final MYA prices--Source: National Agricultural Statistics Service (NASS), Agricultural Prices on the publishing dates listed under column C. Exact publishing dates for 2016/17 MYA prices are unavailable, but are generally published near the end of the month. P=Projected MYA prices--Source: USDA's World Agricultural Supply and Demand Estimates or Interagency Commodity Estimates Committee Minutes. MYA price projections are the mid-point of the price forecast range, when applicable.
 2/ Medium/short grain excludes temperate japonica rice.

SOURCE: https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/arc-plc/pdf/2016_plc.pdf

ARC

There are two types of Agricultural Risk Coverage—ARC-County and ARC-Individual. Essentially all base acres of covered commodities in Georgia that are enrolled in ARC are enrolled in ARC-County.

ARC-County provides a payment if county Actual Revenue for the crop, defined as the MYA Price times the county yield, is less than the county ARC Revenue Guarantee for the crop. The Guarantee is 86% of the Benchmark Revenue—which is a history of price and yield for the previous 5 years.

For 2016 ARC-County, the Benchmark Revenue is

$$2016 \text{ Benchmark Revenue} = 2011\text{-}2015 \text{ OA Price}^1 \times 2011\text{-}2015 \text{ OA Yield}^2$$

1/ OA (Olympic Average) Price is the higher of the MYA Price or Reference Price each year, dropping the high and low years and averaging the remaining 3 years. This is referred to as the Benchmark Price.

2/ OA (Olympic Average) Yield is the county average yield or 70% of the county T-yield whichever is higher each year, dropping the high and low years and averaging the remaining 3 years. This is referred to as the Benchmark Yield.

Actual Revenue is not known until after the end of the marketing year for the crop; but the Benchmark Yield, Benchmark Price, Benchmark Revenue, and Revenue Guarantee data for the crop are available on-line by state and county at the same FSA website given earlier:

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

For 2016, on this page, look under “Non-Program Year Specific Data” and then click on the link that contains “2016 Benchmark Revenue and Payment Rates”. This is an Excel spreadsheet file.

Non-Program Year Specific Data

- [County Average Counter-cyclical Payment Yields For Assigning PLC Yields](#) (Excel format, 663 KB)
- [70 percent of FSA T-yield \(Substitute yields for ARC program\)](#) (Excel format, 10 MB)
- [2014 and 2015 ARC-County Yields, Revenue, and Payment Rates and 2016 Benchmark Revenue and Payment Rates as of April 5, 2017](#) (Excel format, 3 MB)

In this spreadsheet, one can select state and county from the drop-down menu in columns B and C. Then one can scroll to the right in the spreadsheet to find 2016 data. Below is an example using Bulloch County. The spreadsheet will show all covered commodities in the county, the 2016 Benchmark Yield for each crop by “Irrigated” and “Non-Irrigated” or “All” yield types. It will also show the Benchmark Price, Benchmark Revenue, and Revenue Guarantee by crop for 2016.

	A	B	C	D	E	F	AK	AL	AM	AN	AO
1							Program Year 2016 Benchmark Revenue and Maximum Payment Rates				
2	ARC-CO Yields, Prices, Revenue, and Payment Rates as of April 5, 2017						AAA	BBB	CCC	DDD	EEE
3									(AAA * BBB)	(86% of CCC)	(10% of CCC)
4	ST_Ct	State Name	County Name	Crop Name	Unit	Yield Type	2016 Bench Mark (2011-15 olympic avg)	2016 Bench Mark Price (2011-15 olympic avg)	2016 Benchmark Revenue	2016 Guarantee Revenue	2016 Maximum Payment Rate
1647	13031	Georgia	Bulloch	Barley	Bushel	All	66	\$5.6400	\$372.24	\$320.13	\$37.22
1648	13031	Georgia	Bulloch	Canola	Pound	All	1,607	\$0.2158	\$346.79	\$298.24	\$34.68
1649	13031	Georgia	Bulloch	Corn	Bushel	All	157	\$4.7900	\$752.03	\$646.75	\$75.20
1650	13031	Georgia	Bulloch	Grain Sorghum	Bushel	All	64	\$4.7700	\$305.28	\$262.54	\$30.53
1651	13031	Georgia	Bulloch	Oats	Bushel	All	57	\$3.4800	\$198.36	\$170.59	\$19.84
1652	13031	Georgia	Bulloch	Peanuts	Pound	All	3,656	\$0.2787	\$1,018.93	\$876.28	\$101.89
1653	13031	Georgia	Bulloch	Sesame Seed	Pound	All	442	\$0.3933	\$173.84	\$149.50	\$17.38
1654	13031	Georgia	Bulloch	Soybeans	Bushel	All	33	\$11.8700	\$391.71	\$336.87	\$39.17
1655	13031	Georgia	Bulloch	Sunflower Seed	Pound	All	1,191	\$0.2283	\$271.91	\$233.84	\$27.19
1656	13031	Georgia	Bulloch	Wheat	Bushel	All	43	\$6.7000	\$288.10	\$247.77	\$28.81

Using corn as an example, the Benchmark Revenue is \$752.03 per acre. This is for all corn in Bulloch County as there is no separate irrigated and non-irrigated Benchmark Yield provided. The 2016 ARC Guarantee is \$646.75 for all corn.

$$\text{Benchmark Revenue} = 157 \text{ bu/acre} \times \$4.79 \text{ per bushel} = \$752.03 \text{ per acre}$$

$$\text{ARC Guarantee} = \$752.03 \times 86\% = \$646.75 \text{ per acre}$$

From this data, we know the Guarantee. But will an ARC payment be made and if so, how much? In this example, a payment will be received if Actual Revenue for corn in Bulloch County is less than \$646.75 per acre. But Actual Revenue depends on the 2016 MYA Price and the 2016 Actual Yield for corn in Bulloch County—and this will not be known until after the end of the 2016 marketing year (see Marketing Year and Publishing Dates in the “Table 2” example).

$$\text{Actual Revenue} = \text{Actual County Yield} \times \text{higher of MYA Price or Loan Rate}$$

$$\text{ARC Payment}^1 = \text{ARC Guarantee} - \text{Actual Revenue if Revenue is less than Guarantee}$$

1/ Maximum payment is 10% of Benchmark Revenue

For producers and others wanting to know if an ARC payment will be issued and for how much, these questions can be answered indirectly and an estimate given even though final data is not yet known. This requires calculating a “Trigger Yield”. Again using Bulloch County corn as an example, the ARC Guarantee is \$646.75 per acre. The MYA Price for corn is projected to be \$3.35 per bushel (see column F

in the “Table 2” example on the previous page). Dividing the Guarantee by the projected MYA Price gives us 193. This is the “Trigger Yield”. It can be said that if the MYA Price is \$3.35 per bushel as currently projected—an ARC Payment will be issued if the Bulloch County corn yield is less than 193 bushels per acre.

$$\begin{aligned} \text{Guarantee} &= \$646.75 \text{ per acre} \\ \text{Projected MYA Price} &= \$3.35 \text{ per bushel} \\ \text{“Trigger Yield”} &= \$646.75 / \$3.35 = 193.1 \text{ bushels per acre} \end{aligned}$$

The actual, final yield may not be known, but knowing the Guarantee and having a projected MYA Price, it can be said with confidence that assuming the MYA Price, a payment will be issued if Actual Yield is below the “Trigger Yield”. If Actual Yield is expected to be 180 bushels per acre, for example, the projected ARC Payment would be \$43.55 per acre.

$$\text{ARC Payment Rate}^1 = (193 - 180) \times \$3.35 = \$43.55 \text{ per acre}^1$$

1/ ARC payment cannot be more than 10% of the Benchmark Revenue or \$75.20 per acre in this example (see column EEE of the spreadsheet).

If the farm (FSN) has 100 acres of corn base (including any temporary base assigned to Generic Base), the projected total ARC Payment in this example would be:

$$\$43.55 \times 100 \times 85\% = \$3,702$$

As with the PLC example, this payment is subject to any budget sequestration cut. A cut of 6.6% is expected but still unknown at this time. It is also important to note that an ARC Payment Rate cannot exceed 10% of Benchmark Revenue. In the corn example, this is \$75.20 per acre or the equivalent of approximately 22 bushels at the projected MYA of \$3.35. So, it can be said with confidence that any ARC Payment will be at the maximum allowed amount if yield is equal to or less than 171 bushels per acre (193 – 22 = 171). This can be referred to as the “Maximum Payment Yield”.

ARC Irrigated and Non-Irrigated

Where history and data are available and without disclosing confidentiality of individual farms, some counties will have an irrigated and non-irrigated Benchmark Yield for some covered commodities. An example is shown below for Colquitt County. The same process as just discussed can be used to calculate the “Trigger Yield”, “Maximum Payment Yield”, and ARC Payment Rate.

	A	B	C	D	E	F	AK	AL	AM	AN	AO
1							Program Year 2016 Benchmark Revenue and Maximum Payment Rates				
2	ARC-CO Yields, Prices, Revenue, and Payment Rates as of April 5, 2017						AAA	BBB	CCC	DDD	EEE
3									(AAA * BBB)	(86% of CCC)	(10% of CCC)
4	ST_Ct	State Name	County Name	Crop Name	Unit	Yield Typ	2016 Bench Mark Price (2011-15 olympic avg)	2016 Bench Mark Price (2011-15 olympic avg)	2016 Benchmark Revenue	2016 Guarantee Revenue	2016 Maximum Payment Rate
1730	13071	Georgia	Colquitt	Corn	Bushel	All	180	\$4.7900	\$862.20	\$741.49	\$86.22
1731	13071	Georgia	Colquitt	Grain Sorghum	Bushel	Irrigated	66	\$4.7700	\$314.82	\$270.75	\$31.48
1732	13071	Georgia	Colquitt	Grain Sorghum	Bushel	Nonirrigated	65	\$4.7700	\$310.05	\$266.64	\$31.01
1733	13071	Georgia	Colquitt	Oats	Bushel	All	58	\$3.4800	\$201.84	\$173.58	\$20.18
1734	13071	Georgia	Colquitt	Peanuts	Pound	Nonirrigated	3,186	\$0.2787	\$887.94	\$763.63	\$88.79
1735	13071	Georgia	Colquitt	Peanuts	Pound	Irrigated	4,975	\$0.2787	\$1,386.53	\$1,192.42	\$138.65
1736	13071	Georgia	Colquitt	Soybeans	Bushel	All	39	\$11.8700	\$462.93	\$398.12	\$46.29
1737	13071	Georgia	Colquitt	Sunflower Seed	Pound	All	1,191	\$0.2283	\$271.91	\$233.84	\$27.19
1738	13071	Georgia	Colquitt	Wheat	Bushel	Irrigated	57	\$6.7000	\$381.90	\$328.43	\$38.19
1739	13071	Georgia	Colquitt	Wheat	Bushel	Nonirrigated	47	\$6.7000	\$314.90	\$270.81	\$31.49

To determine the total ARC Payment, one must consider if the farm has a history of irrigated production. If there is a history of irrigated production, then the farm may have an FSA assigned Historical Irrigated Percentage (HIP) for the crop. This HIP must be used to prorate any ARC Payment to the crops base acres. If the farm has no HIP for the crop, any ARC Payment is calculated as already shown using the “All” or “Non-Irrigated” Benchmark Yield.

If the county has irrigated and non-irrigated Benchmark Yields (like shown for some Colquitt County crops, for example) and the farm (FSN) has a HIP assigned for the crop, the ARC Payment will be

$$\begin{aligned} & \text{Irrigated ARC Payment Rate} \times \text{Base Acres} \times \text{HIP} \times 85\% \\ & \text{Plus} \\ & \text{Non-Irrigated ARC Payment Rate} \times \text{Base Acres} \times (1-\text{HIP}) \times 85\% \end{aligned}$$

Other Remarks and Summary

ARC and PLC payments, if any, are not received until October of the following year after harvest. This is because the price component of ARC and PLC is based on the marketing year for the crop and that is not known until the end of the marketing year. Also, yield data used for ARC are not released by FSA until August or September in the year following harvest.

This delay in payment creates uncertainty in planning and cash flow. Producers and others may have questions or need estimates of what ARC and PLC payments will be or are expected to be. There are data and tools available to assist in determining these payments. This document provides web-based links to this information and provides examples of estimated payment calculations.

A PLC payment is issued when the MYA Price is less than the PLC Reference Price. Estimates of the MYA Price are available during the crop marketing year and, while the final MYA Price may not be known, any estimated/projected PLC payment rate can be determined by comparing the projected MYA Price to the Reference Price.

An ARC Payment is issued when the Actual County Revenue for the crop is less than the ARC Revenue Guarantee for the crop—which is equal to 86% of the Benchmark Revenue. While the Actual County Revenue may not be known until after the end of the marketing year for the crop, the Benchmark Revenue and Revenue Guarantee for the crop will be known. Using the projected MYA price, a “Trigger Yield” can be determined. It can be said with confidence that an ARC Payment will be issued if yield is less than the “Trigger Yield” and the projected MYA Price is realized.

ARC and PLC Payments may be subject to reduction (a cut) due to budget sequestration. The expected cut for 2016 crop payments is 6.6%.

A person or legal entity is ineligible for payments if the person’s or legal entity’s average adjusted gross income (AGI) during the compliance period exceeds \$900,000. Payments are limited to \$125,000 per person or entity for the total of ARC, PLC, loan deficiency payments, and marketing loan gains for all covered commodities excluding peanuts. There is a separate and equal limitation for peanuts.

Payments are made on base acres. Where there are multiple producers on a farm (FSN), any payment is also contingent on the producer having sufficient cropland, including double-cropping history under his/her control. A producer cannot claim to have a larger share of base acres and thus claim that share of the payments than the producers cropping history would otherwise indicate.

Acknowledgements

Appreciation is expressed to the Georgia Cotton Commission and the Georgia Peanut Commission for funding support. Appreciation is also expressed to the Georgia state Farm Service Agency for helpful review and comment.



www.caes.uga.edu
www.caes.uga.edu/departments/ag-econ.html

AGECON-17-01

July 2017

The University of Georgia in cooperation with Fort Valley State University, the U.S. Department of Agriculture, and the counties of the state. For more information, contact your local UGA Cooperative Extension office.

The University of Georgia is committed to principles of equal opportunity and affirmative action.