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Implications of Hurricane Michael on the Seed Cotton ARC/PLC Selection Decision

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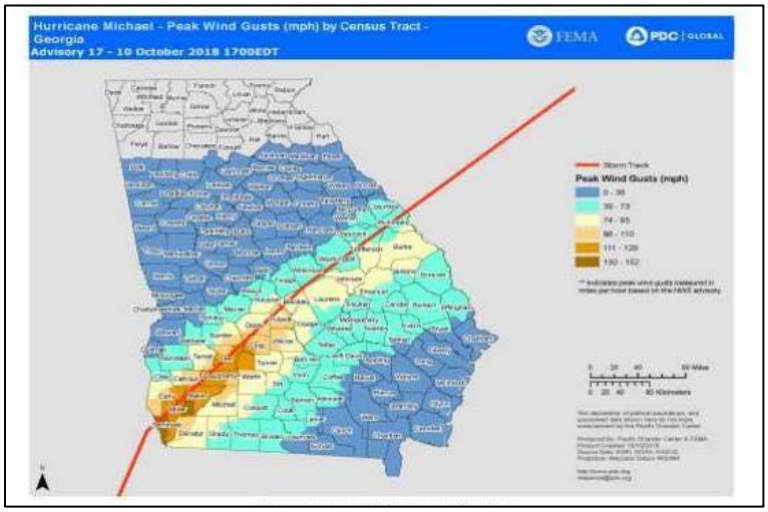
The Bipartisan Budget Act of 2018 eliminated generic base and authorized seed cotton (SC) as a covered commodity for the 2018 crop year and eligible for the Agricultural Risk Coverage (ARC)/ Price Loss Coverage (PLC) program. This legislation is a "bridge" for cotton between the last year of the current farm bill (2018) and a new farm bill for 2019-2023.

Producers on a farm must choose ARC or PLC for seed cotton for 2018. This decision and program enrollment of ARC/PLC must be completed no later than December 7, 2018. The election of ARC/PLC for seed cotton is for 2018 only. Both the House and Senate versions of the new farm bill allow a second 1-time election to be made for the 2019-2023 crops.

PLC (Price Loss Coverage) has been widely considered as the program of choice compared to ARC (Agricultural Risk Coverage). Hurricane Michael, however, caused heavy yield loss on some Georgia farms. Losses on some farms and overall in some counties were 70 to 90% of the expected yield. With this level of loss for 2018, ARC for 2018 (which would be based on 2013-2017 prices and yields) may provide a higher payment than PLC in some situations.

Georgia Cotton Area Impacted

The FEMA storm track and peak wind gusts map below pretty well also typifies the counties most heavily impacted with agricultural losses. The strongest winds, some in excess of 100 mph, ripped through some of Georgia's highest yielding, most productive cotton area. The storm took a path across southwest and then south-central and east-central Georgia with winds in excess of 70 mph in many counties—all with cotton production.



Many producers were expecting a personal record or very high yields—2 bales or 1,000 lbs on non-irrigated production and 1,500 to 1,800 lbs on irrigated production. Some producers report that there is little difference between non-irrigated and irrigated yield due to abundant rainfall this season. Counties in the most severely impacted area, report losses of 60 to 70% or more—some individual producers report 90 to 100% loss in some fields and situations.

Some counties report loss at 25 to 40%. In some instances, late-planted cotton, because less bolls were open and because the crop had yet to be defoliated, fared better with only minimal loss. But even in those instances, loss is yet to be determined because plants are twisted and blown down, and will be difficult to harvest.

Brief Overview of ARC and PLC

PLC (Price Loss Coverage) is based on a market price trigger—the Reference Price. If the MYA (marketing year average price) is less than the Reference Price, a payment is made for the difference. Payment is made on the farm's SC PLC Payment Yield and on 85% of the base acres. PLC is based on price only.

The Reference Price for seed cotton (SC) is $0.367 (36.7 cents per lb). This is a weighted average price of both cotton and cottonseed. If the price for seed cotton (weighted average price for both cotton and cottonseed) for the marketing year is less than $0.367, a payment is made:

SC PLC Payment Rate = $0.367 – the higher of the SC MYA Price or $0.25
SC PLC Payment = PLC Rate x SC PLC Payment Yield x SC Base Acres x 85%

In contrast, ARC (Agricultural Risk Coverage) is based on revenue—both price and yield. An ARC Guarantee is established based MYA prices and county yields for the previous 5 years. If the county's Actual Revenue is less than the Guarantee, a payment is made for the difference. Payment is received on 85% of Base acres.

ARC Benchmark Revenue = 5-year OA[1] yield x 5-Year OA MYA Price[1, 2]
ARC Guarantee = Benchmark Revenue x 86%
ARC Payment Rate = ARC Guarantee – Actual Revenue or 10% of Benchmark, whichever is less
Actual Revenue = County Average Yield x MYA Price or Loan Rate, whichever is highest

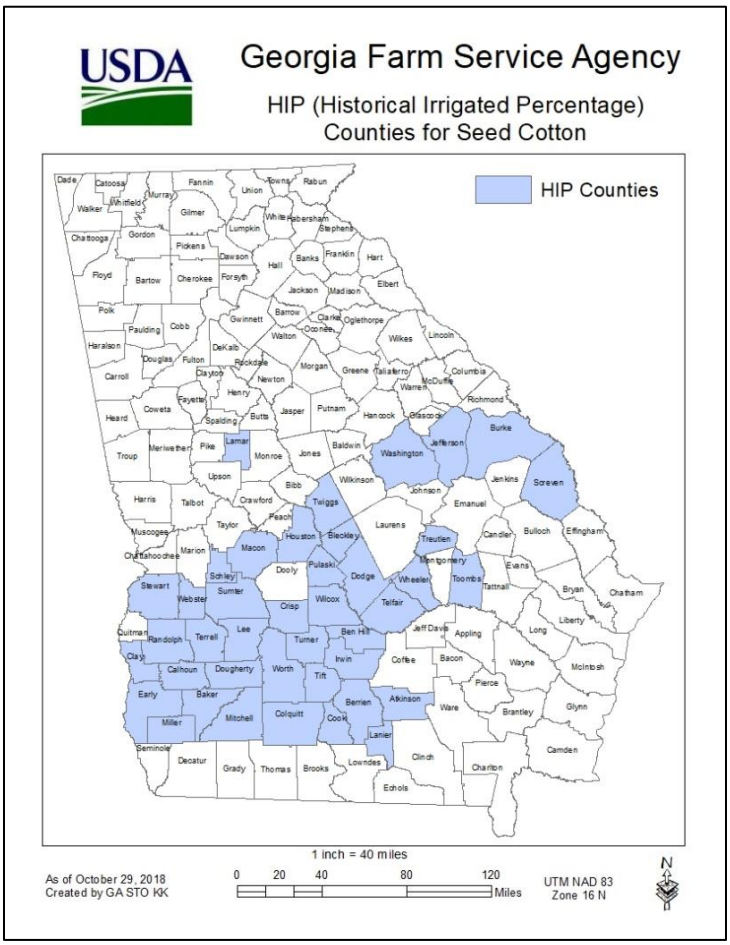
1/ OA (Olympic Average); yields and MYA prices for the previous 5 years, dropping the high and low, averaging the remaining 3
2/ If the MYA Price in any year is less than the Reference Price, the Reference Price is used.

HIP (Historical Irrigated Percentage) for ARC

Based on 2009-2012 acres planted, if a county has at least 25% of acres irrigated and at least 25% non-irrigated of the crop, FSA is required to establish a yield history and separate ARC Benchmark Revenue and Actual Revenue for both irrigated and non-irrigated. These are known as "HIP counties".

For a HIP county, ARC will have an irrigated yield and a non-irrigated yield for the crop. Otherwise, there will be a single "All" yield designation. The HIP counties in Georgia for seed cotton are shown in the following map.

If a farm is in a HIP county and if the farm itself has a history of irrigation (the farm does not have to meet the 25-25 rule, just have a history of a mix of irrigated and non-irrigated), FSA will assign a HIP Factor for the farm. The HIP factor is the historical percentage of irrigated acres of the crop planted.



For a farm with a HIP factor in a HIP county, any ARC payment is calculated as

ACR Payment Rate ($/Acre) = ARC Payment Irrigated x HIP + ARC Payment Non-Irrigated x (1-HIP)

This will be the weighted average payment and will be received on 85% of base acres.

<u>PLC or ARC</u>

To recap, producers on a farm have until December 7, 2018 to elect PLC or ARC for seed cotton (SC) for 2018. The decision is for 2018 only—the last year of the current farm bill. Both House and Senate versions of a new farm bill call for another election to be made for 2019-2023.

What if, instead, the current farm bill is extended? Should there be a 1-year extension, a new election would be at the discretion of USDA or could be specified in legislation. As a possible precedent, under the 2008 farm bill extension, producers were given opportunity to re-elect between Average Crop Revenue Election (ACRE) and Direct and Counter-Cyclical Payment Program (DCP).

Our analysis addresses specifically which option, ARC or PLC, looks better for 2018. <u>For 2018 only.</u> We assume producers will make another separate ARC or PLC decision for the new farm bill or for an extension and that decision should be based on what is best longer term.

Currently, the projected PLC payment rate for seed cotton (SC) is $0.0184 (1.84 cents) per pound. This is based on current projections for the market year average price (MYA) for 2018 cotton and cottonseed.

Obviously, this is subject to change—the marketing year for cotton does not end until July 31. So, the actual SC PLC payment rate for the 2018 crop could be more or less than the current projection/estimate of $0.0184.

The PLC payment is based on the farm's SC PLC Payment Yield—unlike ARC which is based on county average yields, not farm yields. The PLC payment will be

PLC Payment ($/Acre) = SC PLC Payment Rate (currently projected at $0.0184/lb) x SC PLC Pay Yield

Just like ARC, PLC is received on 85% of the farms seed cotton base acres. Assuming a 2018 PLC payment rate of 1.84 cents, the following shows the payment per acre at varying seed cotton (SC) payment yields.

2018 Seed Cotton (SC) PLC Payment Per Acre at Various PLC Payment Yields (Assuming PLC of 1.84 cents)

Farm SC PLC Payment Yield[1]	1,200	1,440	1,680	1,920	2,160	2,400	2,640	2,880
Equivalent Lint Yield[2]	500	600	700	800	900	1,000	1,100	1,200
PLC Payment[3]	$22.08	$26.50	$30.91	$35.33	$39.74	$44.16	$48.58	$52.99

1/ Payment Yield is 2.4 times the farms 2008 farm bill CCP yield or may be updated to use 90% of the farms 2008-2012 average yield.

2/ Payment Yield divided by 2.4

3/ Payment yield times $0.0184; Per acre assuming current projection of 1.84 cents; received on 85% of SC base acres.

Analysis for Representative Counties

For 2018 ARC, any payment will be determined using 2013-2017 yields and prices. The ARC Benchmark Revenue and Guarantee will be based on 2013-2017. Actual Revenue for 2018 is then compared to this to determine if there will be an ARC payment.

Based on the best currently available data* for 2013-2017 and estimates/projections for 2018, we looked at 10 counties we considered "representative" based on the storms track and the varying severity of the damage across the region impacted. In doing so, we also wanted to include counties that were HIP and those that were not.

Data*

Seed cotton (SC) marketing year average price (MYA) is a weighted average price for both cotton and cotton seed. It is determined from the annual production of upland cotton and all cottonseed. The MYA prices and production for cotton and cottonseed come from USDA but the resulting SC historical MYA prices and the current projection for 2018 can be found on FSA's web page under "PLC/ARC Program Data" at https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/arc-plc/pdf/2018_mya.pdf

Historical seed cotton yields for 2013-2017 to be used for 2018 ARC are available also on the FSA web page. Currently, however, that dataset is incomplete. It especially does not include both irrigated and non-irrigated yields for HIP counties and has no data for 2017. Where available for 2013-2016 we used FSA's seed cotton yields by state and county, found under "2014, 2015, 2016, and 2017 ARC-County Yields, Revenue and Payment Rates as of October 4, 2018" at https://www.fsa.usda.gov/programs-and-services/arcplc_program/arcplc-program-data/index

For any 2013-2016 yield data not yet available from FSA, we used data provided by the National Cotton Council from the USDA Risk Management Agency (RMA). This data seems to compare very closely with corresponding NASS and FSA data that we could find. The RMA data can be found at http://www.cotton.org/econ/cropinfo/cropdata/rma-yield-data.cfm

For 2017, we used the RMA data for irrigated and non-irrigated if for a HIP county. If not a HIP county, for 2017 we used USDA NASS estimates from https://quickstats.nass.usda.gov/

Estimated post-storm cotton yields for 2018 were provided by UGA Extension county agents.

Detailed results were completed for 10 counties and then all counties summarized and compared in a single table. Let's briefly walk through several of the county detailed analysis to illustrate how the analysis was done then we'll compare and discuss all the representative situations based on the summary table.

Decatur County, for example, was among one of the hard-hit counties. It is not a HIP county which means that for ARC purposes, county yields are classified as "All"—not separated as irrigated and non-irrigated.

Decatur County (All)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	2,424	0.3933	~~0.3933~~
2014	~~2,789~~	~~0.3161~~	~~0.367~~
2015	2,789	~~0.3254~~	0.367
2016	2,606	~~0.3456~~	0.367
2017	~~2,174~~	~~0.3323~~	0.367
OA	**2,606**		**0.367**

	Lint	SC
2018 Actual Yield[1]	700	1,680
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$586**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ 2013-2016 = FSA, 2017 = NASS x 2.4

2/ FSA; Reference Price used if > MYA Price

a. 10% of Benchmark Revenue	$95.65
b. ARC Guarantee minus Actual	$236.96
SC ARC-CO Payment*	**$95.65**

*Lesser of a or b

2018 Benchmark Revenue = 2,606 x .367 = $956

2018 ARC Guarantee = $956 x 86% = $823

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield	**5,199**
Equivalent Lint Yield	**2,166**

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

The projected ARC Benchmark Revenue for 2018 is $956 per acre based on the Olympic Average (OA) 2013-2017 yield and price. The Guarantee would be $823 (86% of the Benchmark). The expected cotton yield for Decatur County is 700 lbs/acre or an equivalent seed cotton yield of 1,680 lbs. Multiplying this by the currently projected SC MYA Price of $0.3486 for 2018 gives an Actual Revenue of $586. Actual Revenue is projected to be $237 per acre less than the Guarantee—but any ARC payment is capped at 10% of the Benchmark Revenue or $95.65 per acre.

PLC is based on the farm's own yield history—not the county. So, even if we assume the currently projected PLC rate of 1.84 cents, how ARC and PLC compare depends on the farm's PLC payment yield. If we take the projected ARC Payment ($95.65 for Decatur County) and divide that by the projected PLC rate of $0.0184, we get 5,199—this would be what the farm's PLC yield would have to be to give an equivalent PLC payment of $95.65. This would be equivalent to a cotton yield of 2,166 lbs per acre.

Early County is also one of the heaviest hit counties and is a HIP county. The expected irrigated yield for 2018 is only 500 lbs/acre. Irrigated and non-irrigated are expected to yield about the same because of the storm.

The projected irrigated ARC Guarantee for 2018 is $886 per acre. Based on the estimated 500-lb actual yield and currently projected SC MYA price, Actual Revenue would be $418. This is over $400 less than the Guarantee but the ARC Payment would be capped at $103. A farm SC PLC Payment Yield of 5,601 lbs or roughly double the 2013-2017 OA yield for Early county, would be needed for PLC to equate with ARC.

For ARC non-irrigated, the Revenue Guarantee is $435 compared to the same $418 Actual Revenue as irrigated. A much smaller ARC Payment of $17.24 per acre is projected. Depending on the farm's PLC Payment Yield, PLC is very likely to pay out more—the PLC equivalent yield on a lint basis would be only 390 lbs—well below what any farms PLC Payment Yield is likely to be.

Early County (Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC						
	SC Yield[1]	SC MYA Price[2]			Lint	SC
2013	~~1,906~~	0.3933	~~0.3933~~	2018 Actual Yield[1]	500	1,200
2014	~~3,151~~	~~0.3161~~	~~0.367~~	2018 SC MYA Price[2]		0.3486
2015	2,803	~~0.3254~~	0.367	**2018 Actual Revenue**		**$418**
2016	2,952	~~0.3456~~	0.367	1/ UGA Extension estimate		
2017	2,669	~~0.3323~~	0.367	2/ Projection as of October, 2018		
OA	**2,808**		**0.367**			
1/ RMA x 2.4				a. 10% of Benchmark Revenue		$103.05
2/ FSA; Reference Price used if > MYA Price				b. ARC Guarantee minus Actual		$467.94
2018 Benchmark Revenue = 2,808 x .367 = $1,031				**SC ARC-CO Payment***		**$103.05**
2018 ARC Guarantee = $1,031 x 86% = $886				*Lesser of a or b		
PLC Reference Price			0.367			
2018 SC MYA Price[1]			0.3486	**Breakeven SC PLC Yield**		**5,601**
2018 PLC Payment Rate			**0.0184**	**Equivalent Lint Yield**		**2,334**
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.						

Early County (Non-Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC						
	SC Yield[1]	SC MYA Price[2]			Lint	SC
2013	1,342	0.3933	~~0.3933~~	2018 Actual Yield[1]	500	1,200
2014	~~1,133~~	~~0.3161~~	~~0.367~~	2018 SC MYA Price[2]		0.3486
2015	1,322	~~0.3254~~	0.367	**2018 Actual Revenue**		**$418**
2016	~~1,519~~	~~0.3456~~	0.367	1/ UGA Extension estimate		
2017	1,476	~~0.3323~~	0.367	2/ Projection as of October, 2018		
OA	**1,380**		**0.367**			
1/ 2013-2016 = FSA, 2017 = RMA x 2.4				a. 10% of Benchmark Revenue		$50.65
2/ FSA; Reference Price used if > MYA Price				b. ARC Guarantee minus Actual		$17.24
2018 Benchmark Revenue = 1,380 x .367 = $506				**SC ARC-CO Payment***		**$17.24**
2018 ARC Guarantee = $506 x 86% = $435				*Lesser of a or b		
PLC Reference Price			0.367			
2018 SC MYA Price[1]			0.3486	**Breakeven SC PLC Yield**		**937**
2018 PLC Payment Rate			**0.0184**	**Equivalent Lint Yield**		**390**
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.						

Dooly County was not among the most severely impacted counties like far SW Georgia but growers nevertheless incurred substantial loss. For Dooly County (an "All" county), the 2013-2017 SC OA yield is 2,373 lbs or an equivalent lint yield of 989 lbs (2,373 / 2.4 = 989). The ARC Guarantee for 2018 is estimated to be $749 per acre. The county is expected to average 850 lbs or SC yield of 2,040 lbs. Actual Revenue is projected at $711. This would result in an ARC payment of $38 per acre ($749 Guarantee - $711 Actual = $38 payment).

The expected 2018 yield (2,040) and SC PLC Payment Yield needed to provide an equivalent PLC payment (2,050) are both not far below the 2013-2017 OA yield. What this means is that although the county suffered yield loss (due to expected very high yields) and although an ARC payment is projected, there may be little difference between ARC and PLC payments depending on the farms PLC Payment Yield. In instances like this, if the farm has a good and above average PLC Payment Yield, PLC may pay more than ARC if the projected PLC rate of 1.84 cents or better holds. Conversely if the farms PLC Payment Yield is low, or the projected PLC payment rate is low.

Dooly County (All) -- Projected 2018 ARC Payment aand Comparison to PLC						
	SC Yield[1]	SC MYA Price[2]			Lint	SC
2013	~~2,160~~	0.3933	~~0.3933~~	2018 Actual Yield[1]	850	2,040
2014	2,323	~~0.3161~~	~~0.367~~	2018 SC MYA Price[2]		0.3486
2015	2,450	~~0.3254~~	0.367	**2018 Actual Revenue**		**$711**
2016	~~2,462~~	~~0.3456~~	0.367	1/ UGA Extension estimate		
2017	2,345	~~0.3323~~	0.367	2/ Projection as of October, 2018		
OA	**2,373**		**0.367**			
1/ 2013-2016 = FSA, 2017 = NASS x 2.4				a. 10% of Benchmark Revenue		$87.08
2/ FSA; Reference Price used if > MYA Price				b. ARC Guarantee minus Actual		$37.72
2018 Benchmark Revenue = 2,373 x .367 = $871				**SC ARC-CO Payment***		**$37.72**
2018 ARC Guarantee = $871 x 86% = $749				*Lesser of a or b		
PLC Reference Price			0.367			
2018 SC MYA Price[1]			0.3486	**Breakeven SC PLC Yield**		**2,050**
2018 PLC Payment Rate			**0.0184**	**Equivalent Lint Yield**		**854**
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.						

Burke County, one of the largest cotton counties on the east side of the state, did not incur as significant a loss as other counties. Many counties that were impacted by Hurricane Michael, even though not in a severe-impacted area, nevertheless are expected to have losses of 20 to 25% <u>from the expected high yield</u>.

Burke is a HIP county. For irrigated ARC, the 2013-2017 SC OA Yield is 2,642 lbs or a lint equivalent of 1,101 lbs. The estimated 2018 irrigated ARC Revenue Guarantee is $834 per acre. The 2018 expected yield is 1,050 lbs or a seed cotton equivalent of 2,520 lbs. Projected 2018 Actual SC Revenue is $878.

The 2018 estimated irrigated yield of 1,050 lbs very likely represents a loss from what was expected to be a high-yielding crop for many growers and for the county. But the loss actually just pushed the now expected post-storm yield down to near average.

Projected 2018 Actual Revenue for irrigated is higher than the Revenue Guarantee and no irrigated ARC payment is expected.

Burke County (Irrigated) -- Projected 2018 ARC Payment aand Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	~~2,340~~	0.3933	~~0.3933~~
2014	~~3,262~~	~~0.3161~~	~~0.367~~
2015	2,568	~~0.3254~~	0.367
2016	2,587	~~0.3456~~	0.367
2017	2,770	~~0.3323~~	0.367
OA	**2,642**		**0.367**

	Lint	SC
2018 Actual Yield[1]	1,050	2,520
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$878**

1/ UGA Extension estimate
2/ Projection as of October, 2018

1/ 2013-2017 = RMA x 2.4
2/ FSA; Reference Price used in > MYA Price

a. 10% of Benchmark Revenue	$96.95
b. ARC Guarantee minus Actual	$0.00
SC ARC-CO Payment*	**$0.00**

2018 Benchmark Revenue = 2,642 x .367 = $970
2018 ARC Guarantee = $970 x 86% = $834
*Lesser of a or b

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield
Equivalent Lint Yield

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Burke County (Non-Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	1,344	0.3933	~~0.3933~~
2014	~~1,800~~	~~0.3161~~	~~0.367~~
2015	~~989~~	~~0.3254~~	0.367
2016	1,087	~~0.3456~~	0.367
2017	1,486	~~0.3323~~	0.367
OA	**1,306**		**0.367**

	Lint	SC
2018 Actual Yield[1]	516	1,238
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$432**

1/ UGA Extension estimate
2/ Projection as of October, 2018

1/ 2013-2016 = FSA, 2017 = RMA x 2.4
2/ FSA; Reference Price used if > MYA Price

a. 10% of Benchmark Revenue	$47.92
b. ARC Guarantee minus Actual	$0.00
SC ARC-CO Payment*	**$0.00**

2018 Benchmark Revenue = 21,306 x .367 = $479
2018 ARC Guarantee = $7479 x 86% = $412
*Lesser of a or b

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield
Equivalent Lint Yield

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

For non-irrigated, the 2013-2017 OA seed cotton yield is 1,306 lbs or an equivalent cotton lint yield of 544 lbs. The estimated non-irrigated 2018 ARC Benchmark Revenue is $479 and Guarantee $412.

Actual 2018 non-irrigated yield for Burke County is 516 lbs or a seed cotton (SC) yield of 1,238 lbs. Projected Actual Revenue is above the ARC Guarantee. No non-irrigated ARC payment is expected.

Summary and Implications

Summary Comparison of Projected ARC Payments, By Representative County[1]

County	ARC Yield Type	2013-2017 OA Yield		Expected 2018 Yield		Projected ARC Payment[4]	Equivalent PLC Pay Yield[5]	
		Lint[2]	SC	Lint	SC[3]		Lint	SC
Brooks	All	967	2,321	900	2,160	$0		
Bulloch	All	830	1,993	900	2,160	$0		
Burke	Irr	1,101	2,642	1,050	2,520	$0		
Burke	NonIrr	544	1,306	516	1,238	$0		
Colquitt	Irr	1,138	2,732	800	1,920	$100	2,270	5,449
Colquitt	NonIrr	844	2,025	500	1,200	$74	1,683	4,038
Decatur	All	1,086	2,606	700	1,680	$96	2,166	5,199
Dooly	All	989	2,373	850	2,040	$38	854	2,050
Early	Irr	1,170	2,808	500	1,200	$103	2,334	5,601
Early	NonIrr	575	1,380	500	1,200	$17	390	937
Jeff Davis	All	851	2,042	900	2,160	$0		
Laurens	All	722	1,733	850	2,040	$0		
Terrell	Irr	1,212	2,909	650	1,560	$107	2,417	5,802
Terrell	NonIrr	644	1,546	650	1,560	$0		

1/ Data from the individual county tables.
2/ Lint yield is seed cotton (SC) divided by 2.4
3/ Expected lint yield times 2.4
4/ Dollars per acre; received on 85% of SC base acres
5/ Pounds per acre. Assuming current 2018 projected SC MYA Price of 34.86 cents/lb. If projected ARC is zero, then N/A.

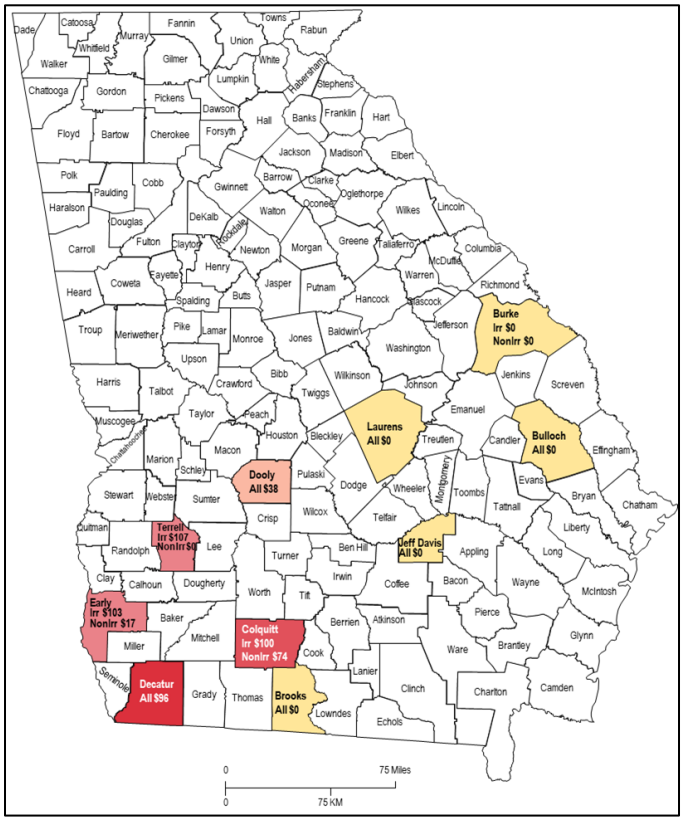
Many if not most Georgia cotton producers were hurt by Hurricane Michael. Some were not hurt as bad as others but all in the storm's path suffered some degree of loss, some very severe. Many producers were anticipating a very good crop and for many, a personal record. The loss and severity of the loss is measured relative to the high yield that were expected prior to the storm.

This analysis looked at 10 counties—all impacted by the storm but to varying degrees. It is hopeful that producers will be to relate to one of the situations and apply the results to their farm and their county situation.

It has been widely believed, and still correctly is, that PLC is the better choice for the new seed cotton (SC) program. But because ARC is based on both yields and price and because current language of the farm bills calls for a ARC/PLC decision to be made for the 2018 crop only, it is believed that ARC may be the better choice for 2018 for producers in counties that suffered heavy loss.

Because very high yields were expected prior to the storm, in some instances the degree of yield loss incurred may have only pushed 2018 actual yield to average or only moderately below average. In these instances, although a yield loss (relative to the expected very good yield) occurred, because ARC pays based on the historical average, an ARC payment may not be triggerred.

Representative Counties and Projected 2018 ARC Payment by County



The 2018 SC MYA price is currently projected to be 34.86 cents per lb. This is still very much subject to change. If realized, the PLC Payment Rate for 2018 seed cotton would be 1.84 cents per lb. This would equate to a PLC payment of mostly around $25 to $50 per acre depending on the farms SC PLC Payment Yield. Both ARC and PLC are received on 85% of SC base acres.

A PLC payment may be received for 2018 although <u>this is still a moving target</u>. The question is, <u>for the 2018 decision</u>, did the county suffer enough yield loss to make ARC a better choice? And, if a producer should decide to choose ARC for 2018, will another decision be allowed for 2019 and beyond?

Our general summary points and conclusions are:

- Many producers were expecting very high yields for both irrigated and non-irrigated, especially non-irrigated compared to average. Some producers report little difference in yield between irrigated and non-irrigated.

- In a HIP county and farm that has a HIP factor, ARC irrigated is more likely to pay than non-irrigated.

- For farms in a HIP county and with a HIP factor, it's possible that both irrigated ARC and non-irrigated would pay or neither or only irrigated or non-irrigated. Whether ARC will be better than PLC will depend on what pays and how much, what does not pay, and the farms HIP factor. If, for example, a HIP county is expected to have a high irrigated ARC payment, ARC is likely the way to go if the farm has a high HIP factor.

- ARC triggers off historical average yields. Even if Hurricane Michael took out 20 to 40% of the county's yield, because very high yields were expected for this year, the resulting remaining yield may not be that far from historical average yield.

- Because ARC has a 14% "deductible" (because the Guarantee is 86% of the Benchmark), this levels the playing field somewhat when comparing ARC to PLC.

- For 2018, ARC is most likely going to be the way to go for producers in a county with 50 to 60% or more yield loss—"loss" being measured relative to the yield that was expected pre-Michael.

- ARC vs PLC also depends on the farms seed cotton PLC payment yield. Landowners can update the payment yield but if this can't be done and/or if the PLC payment yield is low compared to county yields used for ARC, then PLC may already be at a disadvantage or have less of an advantage than it otherwise have.

- In some situations, especially if a high ARC payment is expected, our so-called "breakeven PLC payment yield" is going to be very high—well above what the farms actual PLC payment yield is. What that means is that ARC is more likely the way to go.

- Assuming the currently projected SC PLC payment rate of 1.84 cents and using what might be an average or typical SC PLC payment yield of, say 1,920 lbs (800 lbs current or updated lint yield x 2.4), the projected PLC payment would be $35 per acre.

- There are uncertainties. Any PLC payment for 2018 is a moving target. The SC MYA Price is yet to be determined. This will also effect ARC because the 2018 SC MYA Price partially determines 2018 Actual Revenue. The 2018 SC county yield is also TBD. We used estimates provided by UGA county Extension agents. There is also the uncertainty of another ARC/PLC election opportunity for any farm bill extension. Both House and Senate versions call for another election in a new farm bill.

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Related Resources

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AGECON-18-09PR **October 2018**

UNIVERSITY OF GEORGIA EXTENSION

Brooks County

Brooks County (All)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	2,486	0.3933	~~0.3933~~
2014	1,980	~~0.3161~~	~~0.367~~
2015	2,498	~~0.3254~~	0.367
2016	~~2,537~~	~~0.3456~~	0.367
2017	~~1,939~~	~~0.3323~~	0.367
OA	**2,321**		**0.367**

	Lint	SC
2018 Actual Yield[1]	900	2,160
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$753**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ 2013-2016 = FSA, 2017 = NASS x 2.4

2/ FSA; Reference Price used if > MYA Price.

a. 10% of Benchmark Revenue	$85.19
b. ARC Guarantee minus Actual	$0.00
SC ARC-CO Payment*	**$0.00**

2018 Benchmark Revenue = 2,321 x .367 = $852

2018 ARC Guarantee = $852 x 86% = $733

*Lesser of a or b

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield

Equivalent Lint Yield

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Bulloch County

Bulloch County (All)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	~~1,548~~	0.3933	~~0.3933~~
2014	2,158	~~0.3161~~	~~0.367~~
2015	~~2,201~~	~~0.3254~~	0.367
2016	1,642	~~0.3456~~	0.367
2017	2,179	~~0.3323~~	0.367
OA	**1,993**		**0.367**

	Lint	SC
2018 Actual Yield[1]	900	2,160
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$753**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ 2013-2016 = FSA, 2017 = NASS x 2.4

2/ FSA; Reference Price used if > MYA Price

a. 10% of Benchmark Revenue	$73.15
b. ARC Guarantee minus Actual	$0.00
SC ARC-CO Payment*	**$0.00**

2018 Benchmark Revenue = 1,993 x .367 = $731

2018 ARC Guarantee = $731 x 86% = $629

*Lesser of a or b

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield

Equivalent Lint Yield

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Burke County

Burke County (Irrigated) -- Projected 2018 ARC Payment aand Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	~~2,340~~	0.3933	~~0.3933~~
2014	~~3,262~~	~~0.3161~~	~~0.367~~
2015	2,568	~~0.3254~~	0.367
2016	2,587	~~0.3456~~	0.367
2017	2,770	~~0.3323~~	0.367
OA	**2,642**		**0.367**

	Lint	SC
2018 Actual Yield[1]	1,050	2,520
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$878**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ 2013-2017 = RMA x 2.4

2/ FSA; Reference Price used in > MYA Price

a. 10% of Benchmark Revenue	$96.95
b. ARC Guarantee minus Actual	$0.00
SC ARC-CO Payment*	**$0.00**

2018 Benchmark Revenue = 2,642 x .367 = $970

2018 ARC Guarantee = $970 x 86% = $834

*Lesser of a or b

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield

Equivalent Lint Yield

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Burke County (Non-Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	1,344	0.3933	~~0.3933~~
2014	~~1,800~~	~~0.3161~~	~~0.367~~
2015	~~989~~	~~0.3254~~	0.367
2016	1,087	~~0.3456~~	0.367
2017	1,486	~~0.3323~~	0.367
OA	**1,306**		**0.367**

	Lint	SC
2018 Actual Yield[1]	516	1,238
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$432**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ 2013-2016 = FSA, 2017 = RMA x 2.4

2/ FSA; Reference Price used if > MYA Price

a. 10% of Benchmark Revenue	$47.92
b. ARC Guarantee minus Actual	$0.00
SC ARC-CO Payment*	**$0.00**

2018 Benchmark Revenue = 1,306 x .367 = $479

2018 ARC Guarantee = $479 x 86% = $412

*Lesser of a or b

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield

Equivalent Lint Yield

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Colquitt County

Colquitt County (Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	~~2,532~~	0.3933	~~0.3933~~
2014	2,832	~~0.3161~~	~~0.367~~
2015	~~3,096~~	~~0.3254~~	0.367
2016	2,832	~~0.3456~~	0.367
2017	2,532	~~0.3323~~	0.367
OA	**2,732**		**0.367**

	Lint	SC
2018 Actual Yield[1]	800	1,920
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$669**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ 2013-2017 = RMA x 2.4

2/ FSA; Reference Price used if > MYA Price

a. 10% of Benchmark Revenue	$100.26
b. ARC Guarantee minus Actual	$192.96
SC ARC-CO Payment*	**$100.26**

*Lesser of a or b

2018 Benchmark Revenue = 2,732 x .367 = $1,003

2018 ARC Guarantee = $1,003 x 86% = $862

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield	**5,449**
Equivalent Lint Yield	**2,270**

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Colquitt County (Non-Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	2,280	0.3933	~~0.3933~~
2014	~~1,387~~	~~0.3161~~	~~0.367~~
2015	2,066	~~0.3254~~	0.367
2016	1,728	~~0.3456~~	0.367
2017	~~2,429~~	~~0.3323~~	0.367
OA	**2,025**		**0.367**

	Lint	SC
2018 Actual Yield[1]	500	1,200
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$418**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ 2013-2016 = FSA, 2017 = RMA x 2.4

2/ FSA; Reference Price used if > MYA Price

a. 10% of Benchmark Revenue	$74.31
b. ARC Guarantee minus Actual	$220.71
SC ARC-CO Payment*	**$74.31**

*Lesser of a or b

2018 Benchmark Revenue = 2,025 x .367 = $743

2018 ARC Guarantee = $743 x 86% = $639

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield	**4,038**
Equivalent Lint Yield	**1,683**

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Decatur County

Decatur County (All)-- Projected 2018 ARC Payment and Comparison to PLC							
	SC Yield[1]	SC MYA Price[2]				Lint	SC
2013	2,424	0.3933	~~0.3933~~		2018 Actual Yield[1]	700	1,680
2014	~~2,789~~	~~0.3161~~	~~0.367~~		2018 SC MYA Price[2]		0.3486
2015	2,789	~~0.3254~~	0.367		**2018 Actual Revenue**		**$586**
2016	2,606	~~0.3456~~	0.367		1/ UGA Extension estimate		
2017	~~2,174~~	~~0.3323~~	0.367		2/ Projection as of October, 2018		
OA	**2,606**		**0.367**				
1/ 2013-2016 = FSA, 2017 = NASS x 2.4					a. 10% of Benchmark Revenue		$95.65
2/ FSA; Reference Price used if > MYA Price					b. ARC Guarantee minus Actual		$236.96
2018 Benchmark Revenue = 2,606 x .367 = $956					**SC ARC-CO Payment***		**$95.65**
2018 ARC Guarantee = $956 x 86% = $823					*Lesser of a or b		
PLC Reference Price			0.367				
2018 SC MYA Price[1]			0.3486		**Breakeven SC PLC Yield**		**5,199**
2018 PLC Payment Rate			**0.0184**		**Equivalent Lint Yield**		**2,166**
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.							

Dooly County

Dooly County (All) -- Projected 2018 ARC Payment and Comparison to PLC							
	SC Yield[1]	SC MYA Price[2]				Lint	SC
2013	~~2,160~~	0.3933	~~0.3933~~		2018 Actual Yield[1]	850	2,040
2014	2,323	~~0.3161~~	~~0.367~~		2018 SC MYA Price[2]		0.3486
2015	2,450	~~0.3254~~	0.367		**2018 Actual Revenue**		**$711**
2016	~~2,462~~	~~0.3456~~	0.367		1/ UGA Extension estimate		
2017	2,345	~~0.3323~~	0.367		2/ Projection as of October, 2018		
OA	**2,373**		**0.367**				
1/ 2013-2016 = FSA, 2017 = NASS x 2.4					a. 10% of Benchmark Revenue		$87.08
2/ FSA; Reference Price used if > MYA Price					b. ARC Guarantee minus Actual		$37.72
2018 Benchmark Revenue = 2,373 x .367 = $871					**SC ARC-CO Payment***		**$37.72**
2018 ARC Guarantee = $871 x 86% = $749					*Lesser of a or b		
PLC Reference Price			0.367				
2018 SC MYA Price[1]			0.3486		**Breakeven SC PLC Yield**		**2,050**
2018 PLC Payment Rate			**0.0184**		**Equivalent Lint Yield**		**854**
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.							

Early County

Early County (Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	~~1,906~~	0.3933	~~0.3933~~
2014	~~3,151~~	~~0.3161~~	~~0.367~~
2015	2,803	~~0.3254~~	0.367
2016	2,952	~~0.3456~~	0.367
2017	2,669	~~0.3323~~	0.367
OA	**2,808**		**0.367**

	Lint	SC
2018 Actual Yield[1]	500	1,200
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$418**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ RMA x 2.4

2/ FSA; Reference Price used if > MYA Price

a. 10% of Benchmark Revenue	$103.05
b. ARC Guarantee minus Actual	$467.94
SC ARC-CO Payment*	**$103.05**

2018 Benchmark Revenue = 2,808 x .367 = $1,031

2018 ARC Guarantee = $1,031 x 86% = $886

*Lesser of a or b

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield	**5,601**
Equivalent Lint Yield	**2,334**

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Early County (Non-Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC

	SC Yield[1]	SC MYA Price[2]	
2013	1,342	0.3933	~~0.3933~~
2014	~~1,133~~	~~0.3161~~	~~0.367~~
2015	1,322	~~0.3254~~	0.367
2016	~~1,519~~	~~0.3456~~	0.367
2017	1,476	~~0.3323~~	0.367
OA	**1,380**		**0.367**

	Lint	SC
2018 Actual Yield[1]	500	1,200
2018 SC MYA Price[2]		0.3486
2018 Actual Revenue		**$418**

1/ UGA Extension estimate

2/ Projection as of October, 2018

1/ 2013-2016 = FSA, 2017 = RMA x 2.4

2/ FSA; Reference Price used if > MYA Price

a. 10% of Benchmark Revenue	$50.65
b. ARC Guarantee minus Actual	$17.24
SC ARC-CO Payment*	**$17.24**

2018 Benchmark Revenue = 1,380 x .367 = $506

2018 ARC Guarantee = $506 x 86% = $435

*Lesser of a or b

PLC Reference Price	0.367
2018 SC MYA Price[1]	0.3486
2018 PLC Payment Rate	**0.0184**

Breakeven SC PLC Yield	**937**
Equivalent Lint Yield	**390**

1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.

Jeff Davis County

Jeff Davis County (All)-- Projeccted 2018 ARC Payment and Comparison to PLC							
	SC Yield[1]	SC MYA Price[2]				Lint	SC
2013	~~1,529~~	0.3933	~~0.3933~~		2018 Actual Yield[1]	900	2,160
2014	1,838	~~0.3161~~	~~0.367~~		2018 SC MYA Price[2]		0.3486
2015	2,290	~~0.3254~~	0.367		**2018 Actual Revenue**		**$753**
2016	~~2,347~~	~~0.3456~~	0.367		1/ UGA Extension estimate		
2017	1,999	~~0.3323~~	0.367		2/ Projection as of October, 2018		
OA	**2,042**		**0.367**				
1/ 2013-2016 = FSA, 2017 = NASS x 2.4					a. 10% of Benchmark Revenue		$74.96
2/ FSA; Reference Price used if > MYA Price					b. ARC Guarantee minus Actual		$0.00
2018 Benchmark Revenue = 2,042 x .367 = $749					**SC ARC-CO Payment***		**$0.00**
2018 ARC Guarantee = $749 x 86% = $644					*Lesser of a or b		
PLC Reference Price			0.367				
2018 SC MYA Price[1]			0.3486		**Breakeven SC PLC Yield**		
2018 PLC Payment Rate			**0.0184**		**Equivalent Lint Yield**		
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.							

Laurens County

Laurens County (All)-- Projected 2018 ARC Payment and Comparison to PLC							
	SC Yield[1]	SC MYA Price[2]				Lint	SC
2013	1,478	0.3933	~~0.3933~~		2018 Actual Yield[1]	850	2,040
2014	~~1,440~~	~~0.3161~~	~~0.367~~		2018 SC MYA Price[2]		0.3486
2015	~~2,198~~	~~0.3254~~	0.367		**2018 Actual Revenue**		**$711**
2016	1,848	~~0.3456~~	0.367		1/ UGA Extension estimate		
2017	1,872	~~0.3323~~	0.367		2/ Projection as of October, 2018		
OA	**1,733**		**0.367**				
1/ 2013-2016 = FSA, 2017 = NASS x 2.4					a. 10% of Benchmark Revenue		$63.59
2/ FSA; Reference Price used if > MYA Price					b. ARC Guarantee minus Actual		$0.00
2018 Benchmark Revenue = 1,733 x .367 = $636					**SC ARC-CO Payment***		**$0.00**
2018 ARC Guarantee = $636 x 86% = $547					*Lesser of a or b		
PLC Reference Price			0.367				
2018 SC MYA Price[1]			0.3486		**Breakeven SC PLC Yield**		
2018 PLC Payment Rate			**0.0184**		**Equivalent Lint Yield**		
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.							

Terrell County

Terrell County (Irrigated)-- Projected 2018 ARC Payment and Comparison to PLC							
	SC Yield[1]	SC MYA Price[2]				Lint	SC
2013	~~2,575~~	0.3933	~~0.3933~~		2018 Actual Yield[1]	650	1,560
2014	~~3,358~~	~~0.3161~~	~~0.367~~		2018 SC MYA Price[2]		0.3486
2015	2,921	~~0.3254~~	0.367		**2018 Actual Revenue**		**$544**
2016	2,990	~~0.3456~~	0.367		1/ UGA Extension estimate		
2017	2,815	~~0.3323~~	0.367		2/ Projection as of October, 2018		
OA	**2,909**		**0.367**				
1/ 2013-2017 = RMA x 2.4					a. 10% of Benchmark Revenue		$106.75
2/ FSA; Reference Price used if > MYA Price					b. ARC Guarantee minus Actual		$374.26
2018 Benchmark Revenue = 2,909 x .367 = $1,068					**SC ARC-CO Payment***		**$106.75**
2018 ARC Guarantee = $1,068 x 86% = $918					*Lesser of a or b		
PLC Reference Price			0.367				
2018 SC MYA Price[1]			0.3486		**Breakeven SC PLC Yield**		**5,802**
2018 PLC Payment Rate			**0.0184**		**Equivalent Lint Yield**		**2,417**
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.							

Terrell County (Non-Irrigated)-- 2018 Projected ARC Payment and Comparison to PLC							
	SC Yield[1]	SC MYA Price[2]				Lint	SC
2013	1,711	0.3933	~~0.3933~~		2018 Actual Yield[1]	650	1,560
2014	1,442	~~0.3161~~	~~0.367~~		2018 SC MYA Price[2]		0.3486
2015	1,486	~~0.3254~~	0.367		**2018 Actual Revenue**		**$544**
2016	~~1,027~~	~~0.3456~~	0.367		1/ UGA Extension estimate		
2017	~~1,922~~	~~0.3323~~	0.367		2/ Projection as of October, 2018		
OA	**1,546**		**0.367**				
1/ 2013-2016 = FSA, 2017 = RMA x 2.4					a. 10% of Benchmark Revenue		$56.75
2/ FSA; Reference Price used if > MYA Price					b. ARC Guarantee minus Actual		$0.00
2018 Benchmark Revenue = 1,546 x .367 = $567					**SC ARC-CO Payment***		**$0.00**
2018 ARC Guarantee = $567 x 86% = $488					*Lesser of a or b		
PLC Reference Price			0.367				
2018 SC MYA Price[1]			0.3486		**Breakeven SC PLC Yield**		
2018 PLC Payment Rate			**0.0184**		**Equivalent Lint Yield**		
1/ Calculated from USDA MYA price projections for cotton and cottonseed as of October 2018. FSA.							