

Seed Cotton PLC/ARC Program for Upland Cotton¹
Beginning with the 2018 Crop
Draft Updated October 17, 2018

Program:

Seed cotton is designated as a covered commodity eligible for Title I Price Loss Coverage (PLC) and Agriculture Risk Coverage (ARC) programs in the 2014 Farm Bill beginning with the 2018 crop. The reference price is set at \$0.367 per lb. Seed Cotton refers to unginned upland cotton that includes both lint and cottonseed. The deadline for producers/landowners to complete the generic base conversion, yield update, and the PLC/ARC election for the 2018 Seed Cotton program is December 7, 2018. The current PLC/ARC election for seed cotton is expected to be a one-time election for the 2018 crop year².

Structure:

Seed Cotton Marketing Year Average (MYA) Price is a weighted average of the upland cotton lint price and the cottonseed price.

$$\text{Seed Cotton MYA Price} = \frac{(\text{U.S. Upland Cotton Lint Production} * \text{U.S. Upland Cotton Lint MYA Price} + \text{U.S. Cottonseed Production} * \text{U.S. Cottonseed MYA Price})}{(\text{U.S. Upland Cotton Lint Production} + \text{U.S. Cottonseed Production})}$$

- USDA/NASS data are used for price and production
- Production is measured in pounds
- Lint and cottonseed prices are weighted based on annual shares of production
- The 2018/19 MYA Price is not final until the end of the marketing year (Aug. 1, 2018 – July 31, 2019) and is generally published in late September or early October
- USDA publishes monthly estimates throughout the marketing year which can be used to calculate an estimated MYA Price

2018/19 Seed Cotton MYA Price Example (based on USDA October 2018 estimates³):

- U.S. Upland Cotton Lint MYA Price (\$/lb) = \$0.73
- U.S. Cottonseed MYA Price (\$/lb) = \$0.0675 (or \$135/ton)
- U.S. Upland Cotton Lint Production (lbs) = 18,992,000 bales * 480 lbs/bale = 9,116,160,000 lbs
- U.S. Cottonseed Production (lbs) = 6,184,000 tons * 2,000 lbs/ton = 12,368,000,000 lbs
- Total U.S. Cotton Lint and Cottonseed Production (lbs) = 9,116,160,000 + 12,368,000,000 = 21,484,160,000 lbs

¹ Information based on NCC's review of the legislative language. Final details are subject to change based on USDA's interpretation of language and implementation.

²Based on current language in the respective versions of the 2018 Farm Bill approved by the House and the Senate, producers will make a new one-time election beginning with the 2019 crop. Should there be a one-year extension of the 2014 Farm Bill, a new election would be either at the discretion of USDA or could be specified in legislation. As a possible precedent under the 2008 Farm Bill extension, producers were given the opportunity to re-elect between the ACRE and CCP programs.

³ Upland cotton and cottonseed production estimates published at:

<https://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1046>. Upland cotton price estimates published at: <https://www.usda.gov/oce/commodity/wasde/>. Cottonseed price estimates published at: <https://www.ers.usda.gov/webdocs/publications/90326/ocs-18j.pdf?v=2827>. Seed cotton price estimates published at: https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/arc-plc/pdf/2018_plc.pdf.

$$\begin{aligned}
 \text{Seed Cotton Price (\$/lb)} &= \frac{(9,116,160,000 * \$0.73 + 12,368,000,000 * \$0.0675)}{(9,116,160,000 + 12,368,000,000)} \\
 &= \frac{(9,116,160,000 * \$0.73 + 12,368,000,000 * \$0.0675)}{21,484,160,000} \\
 &= \frac{9,116,160,000}{21,484,160,000} * \$0.73 + \frac{12,368,000,000}{21,484,160,000} * \$0.0675 \\
 &= (0.4243 * \$0.73) + (0.5757 * \$0.0675) = \$0.3486
 \end{aligned}$$

Seed Cotton PLC Program

PLC program payments are issued when the Seed Cotton Reference Price exceeds the higher of the Seed Cotton MYA price and the Price Floor. The Reference Price is set at \$0.367 per lb. The Price Floor is set at \$0.250 per lb.

Seed Cotton Payment Yield will be based on the upland cotton lint payment yield.

$$\text{Seed Cotton Payment Yield} = 2.4 * \text{Upland Cotton Lint Payment Yield}$$

- Upland Cotton Lint Payment Yield = Higher of CCP lint yield or updated lint yield
- One-time opportunity in 2018 to update the payment yield for upland cotton based on 90% of the average of 2008-2012 actual yields, not counting years in which cotton was not grown

Seed Cotton Payment Yield Example (assuming an 800 lb/acre upland cotton lint payment yield):

- Seed Cotton Payment Yield (lbs/acre) = 2.4 * 800 = 1,920

Seed Cotton Reference Price is set at \$0.367 per lb. The **Seed Cotton Price Floor** is set at \$0.250 per lb.

Seed Cotton PLC Payment Rate is the difference between the Reference Price and the higher of the MYA Price and the Price Floor.

$$\text{Seed Cotton PLC Payment Rate (\$/lb)} = \text{Reference Price} - \text{the higher of (MYA Price, Price Floor)}$$

- Seed Cotton Payment = \$0 if Seed Cotton MYA Price is greater than the Reference Price

Seed Cotton PLC/ARC Payments will be made on 85% of the farm's decoupled seed cotton base.

$$\text{Seed Cotton PLC Payment (\$/base acre)} = \text{PLC Payment Rate} * \text{Payment Yield} * 0.85$$

Seed Cotton PLC Payment Rate Example:

- 2018/19 Seed Cotton MYA Price = \$0.3486
- Seed Cotton PLC Payment Rate (\\$/lb) = \$0.367 – higher of (\$0.3486, \$0.250) = \$0.0184

Seed Cotton PLC Payment Example:

- Seed Cotton PLC Payment (\\$/base acre) = \$0.0184 * 1,920 * 0.85 = **\$30**

Seed Cotton ARC-CO Program

The ARC-CO program provides revenue loss coverage at the county level. ARC-CO payments are issued when the actual county seed cotton revenue is less than the ARC-CO guarantee. The Reference Price is set at \$0.367 per lb. The Price Floor is set at \$0.250 per lb.

Structure:

ARC-CO Guarantee = 86% * Benchmark Seed Cotton MYA price * Benchmark Seed Cotton Yield

Benchmark Seed Cotton MYA Price = average of the previous five years Seed Cotton MYA price, excluding the years with the highest and lowest price (Olympic Average)

- If the MYA price in any of the five years is below the reference price, the reference price is substituted for the MYA price in each year the MYA price is less than the reference price.

Benchmark Seed Cotton Yield = average of the previous five years county Seed Cotton Yield, excluding the years with the highest and lowest yield (Olympic Average)

- If the county yield in any of the five years is below 70 percent of the county transitional yield (T yield), then 70 percent of the T yield is substituted for each year the county yield is less than 70 percent of the T yield.

Benchmark Revenue = U.S. Benchmark Seed Cotton MYA Price * Benchmark Seed Cotton Yield

ARC-CO Guarantee = Benchmark Revenue * 86%

Actual Revenue = U.S. Seed Cotton MYA Price * Seed Cotton Yield

Maximum ARC-CO Payment = 10% * Benchmark Revenue

Revenue Shortfall = ARC-CO Guarantee – Actual Revenue

ARC-CO Payment per Base Acre = minimum of (maximum ARC-CO Payment, Revenue Shortfall) * 0.85

ARC-CO Example Calculation using the October 2018/19 USDA Price Estimates

Marketing Year	Seed Cotton MYA Price (\$/lb)	Assumed County Yields	
		Lint Yield (lbs/acre)	Seed Cotton Yield (lbs/acre)
2013/14	\$0.3933	813	1,951
2014/15	\$0.3161 \$0.3670	894	2,146
2015/16	\$0.3254 \$0.3670	958	2,299
2016/17	\$0.3456 \$0.3670	887	2,129
2017/18	\$0.3323 \$0.3670	834	2,002
2013-17 Oly Avg	\$0.3670	872	2,092
2018/19	\$0.3486	See Figure 1.	

2018/19 Benchmark Revenue (\$/acre) = \$0.3670 * 2,093 = \$768

2018/19 ARC-CO Guarantee (\$/acre) = \$768 * 0.86 = \$661

2018/19 Maximum ARC-CO Payment (\$/acre) = 0.10 * \$768 = \$77 (paid on 85% of base acres)

Potential ARC-CO payments are represented in Figure 1 based on a range of outcomes for the county yield.

Figure 1: ARC-CO Example

