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The ARC-CO Farm Program for Seed Cotton

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Beginning with the 2018 crop year, producers of seed cotton will be eligible to participate in either the Price Loss Coverage (PLC) or Agriculture Risk Coverage (ARC-CO) program. Payments to seed cotton, also referred to as unginned upland cotton, will be decoupled from planting decisions. Bearing this policy aspect in mind, generic acres on a farm will be eligible for conversion/reallocation to covered commodity base acres (to also include seed cotton) for the 2018 and subsequent crop years.

The ARC-CO farm program is a revenue support program, triggered at the parish (county) level when the actual revenue for a covered commodity falls below the revenue guarantee for that covered commodity. ARC-CO provides revenue protection stemming from declines in the national marketing year average (MYA) price and/or area yield. The seed cotton program considers the MYA price of lint and cottonseed coupled along with the weighted share of production for both lint and cottonseed as to calculate a *seed cotton* MYA price. Parish yields, reported by the USDA FSA and delineated by production practice, are multiplied by the 2.40 conversion factor to determine the seed cotton yield per acre for a locale. The ARC-CO benchmark revenue is the product of the previous five-year Olympic-average (O.A.) MYA seed cotton price and the previous five-year O.A. parish seed cotton yield. The ARC-CO revenue guarantee is then set at 86% of the seed cotton benchmark revenue. The historical five-year period for 2018 ARC-CO payment calculation references the 2013 through 2017 crop years. The reported 2018 MYA seed cotton price is multiplied by the parish's actual seed cotton yield in order to calculate the actual revenue. If actual revenue is less than the revenue guarantee, an ARC-CO payment is then triggered. The payment rate is the lesser of the aforementioned difference or 10% of the benchmark revenue. ARC-CO farm program payments are made on 85% of the farm's seed cotton base acres.

In order to evaluate the operational mechanics of the ARC-CO program for seed cotton, several assumptions must be made. Seed cotton MYA prices and yield have been reported for the 2013-2016 crop years by the USDA FSA. The 2017 crop yields are not finalized by production practice as is the 2017 MYA seed cotton price. Therefore, estimates from the USDA FSA are used in the analysis. Figure 1. Using baseline projections for lint and cottonseed prices, obtained from the University of Missouri's Food and Policy Research Institute (FAPRI) March Baseline Briefing Report, lint and cottonseed prices (per pound) were incorporated into a long-term analysis of ARC-CO program performance for Louisiana cotton farms though the 2023 crop year. Prices incorporated in the ARC-CO program analysis are presented in Figure 2. The previous ten-year average weighted share of production for lint and cotton seed is assumed for this program analysis (42% lint and 58% cottonseed).

Since ARC-CO is a revenue support program, estimates of parish level yields must be made to evaluate the program's potential performance. Historical seed cotton production data was obtained from the USDA FSA. The USDA NASS cotton yields for the 2017 crop year were multiplied by the 2.40 conversion factor and used as a proxy for 2017 yield. Figure 3. Future yields (through the 2023 crop year) were set at a rolling average of the previous three-years.

Figure 1. Seed cotton MYA prices, 2013 through 2017.

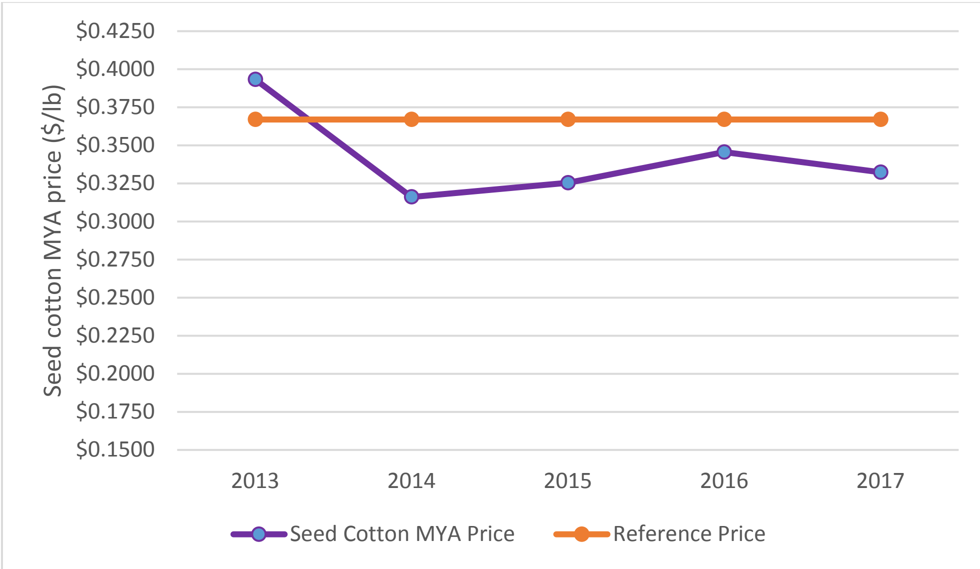


Figure 2. Projected upland lint and cottonseed price, FAPRI baseline.

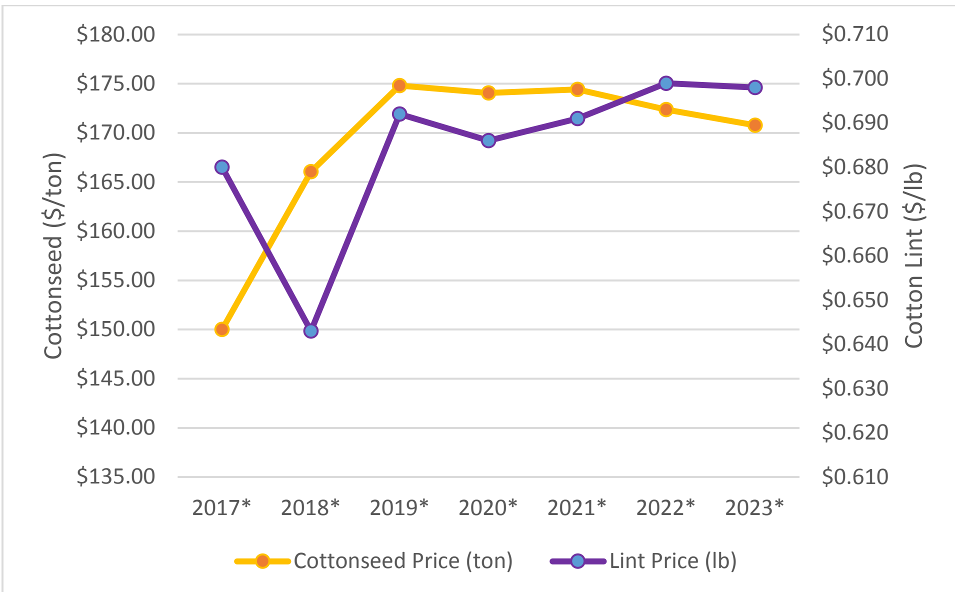
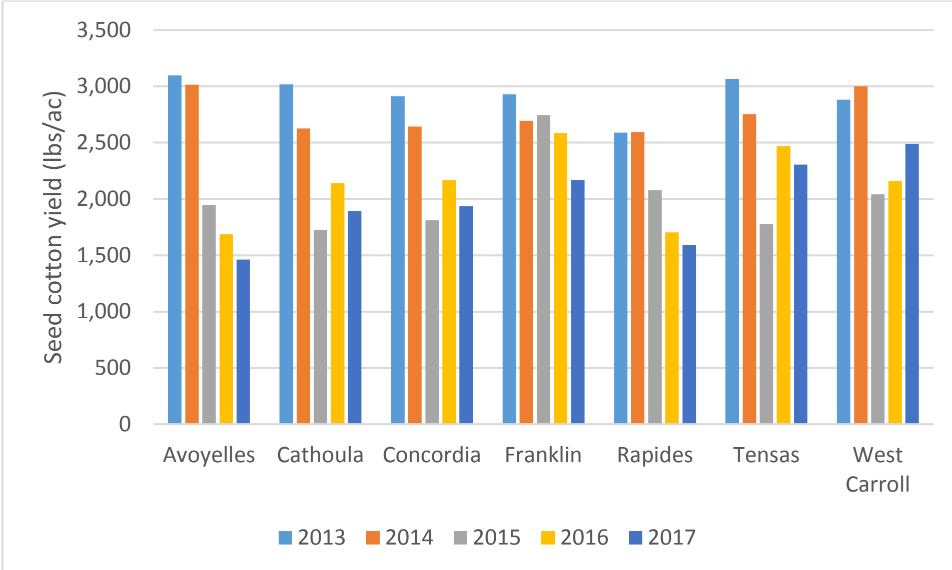


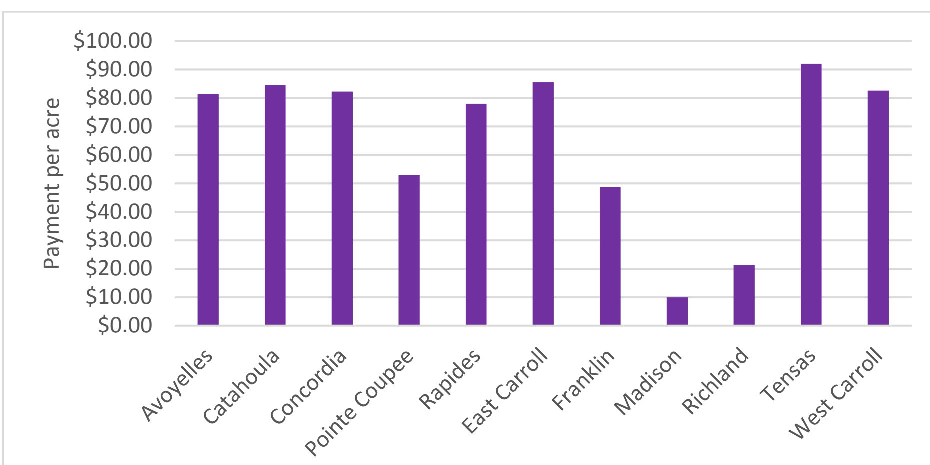
Figure 3. Seed cotton yields, selected parishes.



One can observe in Figure 3 that declines in seed cotton yields occurred post-2013 and 2014 production years. One should recall that the ARC-CO benchmark revenue calculation uses the five-year O.A., meaning that the highest and lowest yields are removed from the benchmark revenue calculation. Although the bookend yields from 2013 and 2017 are removed from the revenue calculation in most instances, the benchmark revenue yield component still considers a declining 2014-2016 yield. The O.A. yield is then multiplied by the O.A. seed cotton price that has increased then decreased over the 2015-2017 period. However, all MYA seed cotton prices are below the reference level of $0.367 per pound. Therefore, the reference price is used in each year, defaulting to an O.A. price of $0.367 per pound.

Using the information contained in Figure 2 combined along with the parish's rolling three-year average yield, a program evaluation of ARC-CO was performed. Across all of the parishes listed in Figure 3, an ARC-CO seed cotton program payment would be triggered in the 2018 crop year. Program payments did, in fact, vary by locale. ARC-CO payments for the 2018 crop year are contained in Figure 4.

Figure 4. ARC-CO program payments for the 2018 crop year.



ARC-CO program payments for seed cotton ranged from $10 to $92 per acre for the 2018 crop year.

Using the same FAPRI baseline assumptions as utilized in calculating ARC-CO program payments for 2018, PLC program payments were also calculated. Since PLC is a price support program tied to national prices, a farm in each parish was assumed to have a seed cotton payment yield of 2,400 pounds. A seed cotton PLC program payment will be triggered in 2018 at a rate of $117 per acre, offering more financial (price) support to producers under the conditions imposed in the analysis.

As the ARC-CO projections were carried into future crop years, only two of the parishes contained in Figure 4 would receive a payment for the 2019 crop year, Avoyelles and Rapides, albeit at a much lower ARC-CO rate than the previous year. No payment was triggered for 2021, 2022, or 2023 crop years under the scenario utilizing FAPRI baseline assumptions. An explanation for this program performance could be that as a rolling three-year average is coupled with the $0.367 per pound reference price plug, variations in revenue are tempered from the ARC-CO program payment calculations in future crop years. Absent of a major price and/or yield shock to seed cotton production in Louisiana over the outlying crop years, ARC-CO payments to seed cotton under the implied model assumptions provide zero ($0) revenue support.

This analysis is subject to those price and yield assumption used in model development. Any change(s) to one or multiple parameters of the ARC-CO program has the potential to alter payment frequency and payment amount and is herein presented solely for educational purposes.

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