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Alternative Farm Program Choices for Covered Commodities Planted on Generic Base Acres

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The deadline for base acre reallocation, yield update, and farm program election is March 31, 2015.

For producers of upland cotton, the 2014 farm bill embodies major substantive change to elements of the crop's safety net. Cotton is no longer a covered commodity and is considered a market loan-only program under the guidelines set forth by the commodity title of the farm bill. One of cotton's risk management tools, the direct payment (and the cotton transition assistance payment of 2014), which were made on an annual basis, were replaced with two new insurance policies aimed at mitigating revenue risk. These products will be administered by USDA RMA and are subsequently contained in the crop insurance title of the farm bill.

Perhaps, the most significant 'change' to cotton policy aside from the insurance programs of 2015, is that the crop is no longer a program or covered commodity in terms of eligibility to participate in commodity revenue and price support programs- ARC and PLC. Since direct and counter-cyclical program payments were made on 85% of the base acres of an enrolled commodity, policymakers were faced with a decision on how to treat the existing cotton base on farms as of September 30, 2013. Cotton base acres in effect for the farm are automatically retained as generic base acres through the 2018 crop year, regardless of whether the decision is made to retain or reallocate base acres. The uniqueness of these generic acres is that, when planted to a covered commodity, they function as additional base acres for the crop and are in addition to established base acres on the farm in that particular crop year. In the event that a farm program is triggered, program payment (ARC or PLC) will be made on 85% of the total base acres on that farm for the respective crop- to include both traditional and generic base acre. Farm bill language states that generic acres must be planted to a covered commodity to be eligible for program benefits and are allocated annually to the covered commodities planted.

The treatment of payment acres pertaining to generic base acres reads as follows from the 2014 farm bill. *"If a single covered commodity is planted and the total acreage planted exceeds the generic base acres on the farm, the generic base acres are attributed to that covered commodity in the amount equal to the total number of generic base acres. If multiple covered commodities are planted and the total number of acres planted to all covered commodities exceeds the generic base acres, the generic base acres are attributed to each of the covered commodities on the farm on a pro rata basis to reflect the ratio of the acreage planted to a covered commodity on the farm to the total acreage planted to all covered commodities on the farm. If the total number of acres planted to all covered commodities on the farm does not exceed the generic base acres, the number of acres planted to a covered commodity is attributed to that covered commodity."*

At farm program election, producers on a farm must indicate their preferred farm program choice for all covered commodities that may or may not be planted to generic acres through the 2018 crop year. Given the flexible nature of generic acres, alternative crops not traditionally produced on a farm may now be eligible to participate in commodity support programs if planted. Therefore, evaluating which program

choice is best for a particular farm and production area are a critical component of any risk management strategy.

In early March 2015, the LSU Agricultural Center's Department of Agricultural Economics and Agribusiness released an interactive farm bill decision aid that provided a brief comparison of the ARC-CO and PLC programs for crops commonly produced in all parishes or for which base acres existed prior to 2013. This model is subject to the limitations (and expectations) of future MYA price and parish-level yield estimations imposed by the user for the 2014 through 2018 crop years. Although the probability of correctly forecasting the final MYA price and parish yield is extremely difficult from a statistical standpoint, observation of program mechanics and performance under alternative price and yield scenarios can be readily observed. (For a complete listing of parish-specific worksheets, please refer to the Staff Report No. 2015-06 available on the department's farm bill webpage.) This decision tool will serve as the background for this report which examines how price expectations can influence the farm program choice for covered commodities planted to generic base acres in Louisiana.

In examining the case of non-irrigated corn planted to generic acres in Tensas parish, the implications of varying planting intentions though 2018 is evaluated under a series of MYA price estimates. This crop, when planted on generic base acre, will be in addition to any existing corn base on the farm for that production year. Historical price and parish yield information was obtained from USDA FSA for purposes of ARC-CO revenue calculation. Critical to the PLC program, is the issue of whether or not the farm has a production history of corn so that a yield update election can be made. If the farm has produced corn in any of the 2008 to 2012 crop years, the yield update formula is applied considering the substitute yield for Tensas parish of 103 bushels. If yield on the farm in any year is below the 103 threshold, the substitute yield is used for that yield parameter in the update formula. If the farm has no production history and considers enrolling corn into the PLC program, the payment yield will reflect the average counter-cyclical parish yield. The average counter-cyclical yield for Tensas parish is 78 bushels.

For this analysis, it is assumed that the farm has a history of corn production and elects to update their payment yield. The MYA price estimated are those released by the University of Missouri FAPRI on February 17, 2015. Parish yield expectations represent no official forecast.

Table 1. Historical MYA price and yield information for non-irrigated corn in Tensas parish, 2009-2013.

Year	Parish Yield per planted acre	US MYA Price	Farm Yield per planted acre
2009	115.00	$3.55	95.00
2010	108.00	$5.18	105.00
2011	94.00	$6.22	100.00
2012	170.00	$6.89	130.00
2013	173.00	$4.45	130.00

Table 2. Expected production conditions in Tensas parish and forecasted MYA price for corn, 2014-18.

Year	Parish Yield per planted acre	US MYA Price	PLC Payment Yield for Farm
2014	165.00	$3.61	97.92
2015	165.00	$3.87	97.92
2016	165.00	$3.91	97.92
2017	165.00	$3.96	97.92
2018	165.00	$4.09	97.92

Table 3. Estimated farm program payment (dollars per base acre) for ARC-CO and PLC.

Year	ARC Payment	PLC Payment
2014	$0.00	$7.49
2015	$27.54	$0.00
2016	$42.11	$0.00
2017	$0.00	$0.00
2018	$0.00	$0.00

Results from the decision tool (appearing in Table 3) indicate that the ARC-CO program ($69.65) would produce a significant greater payment over the five-year duration of the farm bill as compared to the PLC program ($7.49).. Common to both program options, is that the frequency of payment is different-meaning that in some years one program may pay and the other does not. However, this is entirely subject to the price and yield assumptions specified by the producer, as identified in Table 2.

In Table 4, an alternative price scenario is presented. Here, the MYA price for corn is expected to decline below the $3.70 reference price level in the last three years of the farm bill. This price decline warrants the considerations of the PLC program, as downside price protection is afforded under its program design. A key similarity is that the parish level yield remain constant at 165.0 bushels. Since the ARC program was designed to mitigate revenue risk, its policy design allows for price and yield variations from previous years to be considered in the benchmark revenue calculations. Hence, price and yield will determine revenue guarantee levels for the program operating in the parish while PLC is a price-only program.

Table 4. Expected production conditions in Tensas parish under an alternative price scenario.

Year	Parish Yield per planted acre	US MYA Price	PLC Payment Yield for Farm
2014	165.00	$3.61	97.92
2015	165.00	$3.75	97.92
2016	165.00	$3.65	97.92
2017	165.00	$3.60	97.92
2018	165.00	$3.50	97.92

Table 5. Estimated farm program payment (dollars per base acres) for ARC-CO and PLC under the alternative (declining) price scenario.

Year	ARC Payment	PLC Payment
2014	$0.00	$7.49
2015	$44.37	$0.00
2016	$68.09	$4.16
2017	$0.00	$8.32
2018	$0.00	$16.65

Under this second scenario for non-irrigated corn, the ARC-CO results in a greater cumulative program payment for the duration of the farm bill ($112.46) compared to the PLC program ($36.62). PLC offers protection when the price falls below the $3.70 reference price for the last three years of the bill. Therefore, the issue arises of whether the ARC-CO program option should be selected for non-irrigated corn planted on generic acres because the producer will be more likely to grow it prior to the 2017 crop year. If corn is not considered to be in rotation on this particular farm until the end of the farm bill, and the producer expects prices to fall under the $3.70 reference level, then the PLC option warrants consideration.

To illustrate the yield risk component of the ARC program, suppose the parish yield were set to vary from its 2014 projection of 165.0 bushels per acre. The alternative yield scenario in this third example for Tensas parish non-irrigated corn is: 160 in 2015; 155 in 2016; 160 in 2017; and 165 bushels in 2018. The resulting ARC-CO payments made to the parish are estimated at $127.72 over the five year life of the bill. This is slightly higher than the $112.46 payment amount presented in Table 5. Yield variation coupled with a declining price scenario does increase the projected payment in this particular circumstance. However, ARC-CO payments are made for the 2015 and 2016 crop years only- another similarity to the results in Table 4. PLC payment would remain the same as those appearing in Table 5, since the PLC program is tied to MYA prices and uses no parish yield experiences in payment calculation.

Next, suppose that the farm in Tensas parish has a history of grain sorghum production and elects to update their payment yield. The MYA price estimated are those released by the University of Missouri FAPRI on February 17, 2015. Economic analysis follows the same methodology as the previous non-irrigated corn examples.

Table 6. Historical MYA price and yield information for grain sorghum in Tensas parish, 2009-2013.

Year	Parish Yield per planted acre	US MYA Price	Farm Yield per planted acre
2009	60.00	$3.22	60.00
2010	93.00	$5.02	80.00
2011	101.00	$5.99	85.00
2012	110.00	$6.33	90.00
2013	115.00	$4.25	90.00

Table 7. Expected production conditions in Tensas parish and forecasted MYA price for grain sorghum, 2014-18.

Year	Parish Yield per planted acre	US MYA Price	PLC Payment Yield for Farm
2014	85.00	$3.81	70.02
2015	90.00	$3.64	70.02
2016	90.00	$3.66	70.02
2017	90.00	$3.77	70.02
2018	90.00	$3.89	70.02

Table 8. Estimated farm program payment (dollars per base acre) for ARC-CO and PLC.

Year	ARC Payment	PLC Payment
2014	$43.90	$8.33
2015	$43.90	$18.45
2016	$40.42	$17.26
2017	$0.00	$10.71
2018	$0.00	$3.57

Results from the decision tool (Table 8) indicate that the ARC-CO program ($128.22) would produce a significant greater payment over the five-year duration of the farm bill as compared to the PLC program ($58.32). According to the MYA price projections of the FAPRI February baseline, prices are forecasted to remain below the $3.95 reference level for sorghum throughout the duration of the farm bill. Again, consideration should be made as to what year(s) grain sorghum will be planted on the generic base acres. If sorghum is not going to be incorporated into the farm's rotation until 2017, the PLC option would produce an estimated payment in 2017 and 2018. ARC-CO would not produce a payment in the latter stages of the farm bill. Note, this is entirely subject to the price and yield assumptions specified by the producer, as identified in Table 7. Information in Table 9 presents a declining price scenario for grain sorghum in Tensas parish.

Table 9. Expected production conditions in Tensas parish under an alternative price scenario.

Year	Parish Yield per planted acre	US MYA Price	PLC Payment Yield for Farm
2014	85.00	$3.81	70.02
2015	90.00	$3.70	70.02
2016	90.00	$3.65	70.02
2017	90.00	$3.60	70.02
2018	90.00	$3.55	70.02

Table 10. Estimated farm program payment (dollars per base acres) for ARC-CO and PLC under the alternative (declining) price scenario.

Year	ARC Payment	PLC Payment
2014	$43.90	$8.33
2015	$43.90	$14.88
2016	$40.42	$17.86
2017	$11.49	$20.83
2018	$0.00	$22.81

Results from Table 10 indicate that ARC-CO program payments ($139.71) are still greater than the PLC program payments ($84.71). However, under a declining price scenario, the PLC offers price support in 2017 and 2018 when the ARC-CO offers no payment. Results are similar to those in Table 8, but the degree of PLC payments are greater for the remaining two years of the bill which results form a substantial price decline. When comparing the example of non-irrigated corn to grain sorghum, the estimated farm program payment in 2014 to 2016 is greater with the ARC-CO option for both crops.

From the previous examples, a producer (whose goal is to maximize farm program payments) may be under the impression that it could be beneficial to plant corn (ARC-CO enrolled) on generic acres for 2014 through 2016, with grain sorghum (PLC-enrolled) being planting in 2017 and 2018. This analysis would be performed for any and all crops under the consideration of being planted on generic acres. Producers should consider their planting intentions and evaluate the ARC-CO and PLC programs' function in each of the next five years. **The following questions should be asked about each crop that may be planted on generic base acres**.

- Given a series of MYA price and parish yield combinations, is the frequency of payment the same for each program per crop (if planted)?
- How sensitive are these programs to price and yield variation in the parish?
- If price remains relatively stable, but were to decline in the last two or three years of the bill, what is the effect on the magnitude of program payment for ARC-CO and PLC?
- What is the cumulative sum of program payments under each program election?
- In the absence of providing downside price protection (price floor) with the PLC program, is the ARC-CO option the right choice to make if payments were made only in one or two years out of the five year bill?

This information is presented for educational purposes only and is not an endorsement for one farm program or insurance product over another. Consultation should be sought from a certified crop insurance agent regarding insurance options for a commodity produced in a particular geographical area. Additional information can be obtained on farm programs at the LSU Agricultural Center's Department of Agricultural Economics and Agribusiness farm bill webpage at: http://www.lsuagcenter.com/en/our_offices/departments/Ag_Economics_Agribusiness/extension_outreach/2014-Farm-Bill-Information/

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