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Calculations of the new ARC and PLC Payments[1]

The Agricultural Act of 2014 (Farm Bill) has several new programs for agricultural producers, but eliminates Direct Payments, Counter Cyclical Payments, SURE (Supplemental Revenue Assistance) and ACRE (Average Crop Revenue Election). The new Title I programs include Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC). Producers will have to make a one-time irrevocable decision this year to select one of the two programs. If they do not choose, the PLC is the default option and farmers/landlords who fail to make a decision will give up any 2014 payment.

The Act made some significant improvements to crop insurance. Farmers will be able to separate enterprise units between irrigated versus dryland acres and farmers may select different coverage levels for a dryland enterprise unit versus an irrigated enterprise unit on the same crop. The proposal to increase the yield plug for a farmer's APH history from 60% to 70% was not included in the Law. However, if the county suffers a 50 percent yield loss, then farmers in that county and contiguous counties are allowed to exclude that year's low yield out of their Actual Production History (APH) and avoid a reduction in their APH. If the county trigger is met more than once over the last 10 years, then farmers are also allowed exclude those yields from their APH history too. This will help maintain the APH when there are multiple-year catastrophic losses. One word of caution: it is rare for the county yield to suffer a 50% yield loss and the county trigger must be met before farmers can exclude a yield from their APH history.

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Agriculture Risk Coverage (ARC). ARC is similar to the old ACRE program, but with some significant differences. The ARC program guarantee is equal to 86% X five-year rolling Olympic average Marketing Year Average (MYA) price X Expected County Yield. The actual county revenue is equal to the current year's MYA price X the current year's yield. The Farm Service Agency (FSA) then pays the difference between the ARC guarantee and the actual county revenue. The ARC payment has a 10% stop loss that means the maximum payment per acre is 10% of the guarantee. For example if the county's ARC guarantee for wheat is $190, then the maximum payment is $19. The old ACRE program paid a maximum of 25% rather than 10 percent. The $125,000 payment limit also applies, so a really large farm would hit the payment limit before the stop loss in ARC. For this example if payment acres exceed 6,579 then a $19 payment rate would hit the $125,000 limit (6,579 X $19).

The per-acre ARC payment is made on 85% of the farmer's base acres. So farmers who plant their full base will have 15% of their acres not covered. Also, farmers who over-plant their base acres will also have no coverage on those acres that exceed the base. If farmers select ARC at the county level for one crop, then they can select PLC for one of their other crops. However, if they select ARC at the farm level, then farmers must enroll all crops into ARC and any payment is based on 65% of the base acres rather than 85% of the base acres. Also, farmers that enroll in ARC are not eligible to purchase the additional Supplement Coverage Options (SCO) that will cover some of a farmer's deductible in their crop insurance contract.

The ARC guarantee is based on a12-month national average price that includes the 2013/14 marketing year that will not be complete until May 31 for wheat and August 31 for corn, sorghum and soybeans. So those numbers will have to be forecasted. The KSU forecast for the MYA wheat price is in Table 1.

The wheat prices for June, 2012 to January, 2014 are the published cash wheat prices by the National Agricultural Statistical Service (NASS). The prices for February through May are KSU estimates. The KSU estimates are based on the nearby and deferred futures prices plus an expected basis. The 2013 MYA price is weighted by the percent of the crop sold. Based on past history nearly 50% of the wheat crop is sold in the first 3 months of the marketing year. So a large share of the MYA wheat price has already been determined. The price weights in Table 1 are also estimates, but assuming farmers in the aggregate don't make large changes in their methods for selling their crop, then these estimates should be in the "ballpark". The current KSU estimate 2013/14 MYA price is $6.64 for wheat.

The 2013/14 MYA price is then plugged into the MYA prices for crop years 2009 through 2012, and the Olympic average is calculated. The 2009/10 price will be the low price and 2012/13 will be the higher price and both prices will drop out of the Olympic average. Therefore, the 2013/14 price will be in the price used to set the ARC guarantee. Currently it is an estimated price, but the author does not expect FSA to start signup before June 1, as FSA must write all of the implementation rules, publish those rules for public comment, then write the software and test it for enrollment, and train all of their county staff nationwide. It is unlikely FSA will be able to get all of that done before June, but this is good news. There will be no payments, if any are due, until the fall of 2015 and the delay means the 2013/14 wheat price may be complete and not require a forecast for determining the ARC guarantee.

Based on the KSU estimated prices and weights, if the 2014 county yield equals the historical "average" or expected yield, the price will need to fall by 14% (coverage is 86%). The KSU-estimated Olympic average price for wheat is $6.53 and with a yield equal to the expected county yield, the 2014/15 MYA price would need to fall below $5.62 to trigger payments. ARC is revenue, so if price does not change, then lower yields would also trigger payments. The bad news is that if prices fall but the county yield is above the expected county yield, then payments would be reduced or eliminated.

An Example ARC Wheat Calculation. The county's crop insurance T-yield was 34 bushels. NASS harvested Olympic average yield was 33 bu. and 28 bu. based on planted acres. Using the Olympic average county yield based on planted acres for one of the larger USA wheat producing counties, the ARC guarantee would equal $6.53 KSU estimated MYA price X 28 bu. Olympic average planted county NASS yield X 86% = $157.24. The stop-loss would limit the payment to 10% times $157.24 equals $15.72. If the 2014/15 MYA price were $5.06 with a 2014 county yield equal to 28 bushels, the payment per acre would be $157.24 – ($5.06 X 28 bu.) = $15.56. The payment would be made on 85% of the base acres so a farmer with a 100 acre wheat base would be paid $15.56 X 100 base acres X 85% = $1,322.60. If the price were to decline by one penny, this farmer's payment would hit the 10% stop loss ($1,336.54), In addition, the total payments are limited to $125,000.

The expected county yield is a number that is used in many of the calculations for program payments and crop insurance. Congress has instructed USDA to use the yields reported for crop insurance in addition to data reported by NASS surveys. In many Kansas counties, nearly all of the wheat is insured, so the crop insurance reported yields should add credibility to the county yield number. Congress has made it clear that it expects the Risk Management Agency (RMA), NASS, and FSA to work together on the county yield, so that there is only one county yield for a crop in a selected county. Currently, each agency sets its own county yield. In the example, the author used NASS county yields that is based on farmer surveyed yields.

Price Loss Coverage (PLC). The alternative program selection is the PLC program that is very similar to the old counter-cyclical program. Congress replaced the old target prices with new reference prices that are set in the statute. The reference price for wheat is $5.50. Reference prices set as part of the new legislation for some other commodities (per bushel) include $3.70 for corn; $3.95 for grain sorghum; and $8.40 for soybeans.

Under PLC, if the 2014/15 MYA wheat price falls below $5.50, then the wheat farmer will be paid the difference between the actual price and the reference price. For example, if the MYA wheat price were to fall to $5.00 and this farmer has a 100 acre wheat base, and she is an above average farmer with an updated program yield of 42 bushels, the following is the calculated payment. The $5.50 reference price – $5.05 MYA price X 42 bushel updated program yield X 100 base acres X 85% equals $1,606.50 vs. $1,336.54 for ARC that hits the stop loss with a $5.05 MYA price combined with a county yield equal to the county average yield.

In this example, the PLC paid more than ARC because the actual county yield equaled the expected county yield and the PLC and the ARC "strike prices" are nearly the same after the 14% adjustment and the PLC payment was made on an updated program yield that was larger than the county yield. If the price had not changed, but with a lower county yield, then ARC would have paid and PLC would not have paid. If the price declined, but the yield was above the expected county yield, that would reduce or eliminate the ARC payment but would have had no effect on the PLC payment.

Because the two effective strike prices are nearly the same for ARC and PLC on wheat, one would expect most wheat farmers will elect PLC. If they elect PLC, they are then eligible to purchase additional supplemental crop insurance coverage based on county yields to cover some of the deductible in their crop insurance contract. This will provide shallow loss protection and covers all planted acres including acres planted over the base acres, not just 85% of one's base acres. This is not available to those farmers who elect ARC.

A discussion of the SCO and forecasted MYA prices for other commodities will be provided in future AgManager.info articles.

For more information, one needs to enroll in the K-State Research and Extension one-hour webinar, "The New Farm Bill," on Friday, February 21 at 12:00 noon. We will discuss the legislation and what it means to producers. The presentation will include NASS Service prices and yield used for the calculation of payments, as well as changes to crop insurance.

Participants may register on line and pay the $25 fee by credit card. Participants will be able to view the presentation from their home office computer. The paid registration grants the line holder limited copyright permission to provide a public showing of the webinar to their clients. Please provide an audience count for us if you choose to show the webinar to a public group and there is no additional cost, but feel free to thank the Dean. More information and registration is available online at www.AgManager.info or by contacting Rich Llewelyn at rvl@ksu.edu or 785-532-1504.

Barnaby will also discuss the new farm bill (live) on Thursday, February 27 in Scott City, KS. in a two-part workshop, “New Farm Bill Commodities Programs and Risk-Assessed Marketing II Workshop.” More information and registration for those programs is available by contacting John Beckman at jbeckman@ksu.edu or 620-872-2930.

Table 1. Comparing the 2014 MYA Reference Price for 2014 ARC vs. PLC Statute Price for Wheat

	MYA Year	13/14	Est Wt.	Wt. Price	14/15 MYA
	June	7.32	13.6	0.9970	0.7742
	July	6.93	19.9	1.3777	1.1476
	August	6.87	13.6	0.9316	0.7828
	September	6.80	8.4	0.5698	0.4944
	October	7.00	5.5	0.3836	0.3233
	November ..	6.85	4.8	0.3261	0.2808
	December .	6.73	6.8	0.4576	0.4074
	January 1 ...	6.31	7.5	0.4758	0.4518
Forecasted	February	5.58	4.8	0.2688	0.2888
Forecasted	March	5.63	5.6	0.3155	0.3361
Forecasted	April	5.63	4.7	0.2626	0.2797
Forecasted	May	5.68	4.9	0.2785	0.2912
	Forecasted 13/14 & 15/15 MYA price			6.64	5.86
	MYA Price 12/13			7.77	
	MYA Price 11/12			7.24	
	MYA Price 10/11			5.70	
	MYA Price 09/10			4.87	
	5 Yr. Olympic Average Reference Price for 2014 ARC			6.53	
	ARC 14% Deductible			**$5.55**	
	PLC Reference Price			**$5.50**	