No Call in Revenue Protection (RP) Crop Insurance

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Why RMA Doesn't Separate Yield Loss from Price Loss in RP?

1. Calculating RP in total dollars is simpler.
2. Many farmers, agents, and loss adjustors have no experience with CME traded options, therefore showing an RP option could add to the confusion.
3. RMA's Yield Protection (YP) values yield loss at its projected price, and not at it's current market value, providing yield replacement coverage.
4. Harvest Price Option (HPO) coverts yield losses to yield replacement coverage.
3. Isolates the "put" from the rest of the RP coverage.
4. Identifies the source of the negative put values.

USDA Calculates RP Indemnities in Cash Only

1 Sales = Production X (harvest price + basis)

2 RP payment =
max [(max (strike price, harvest price) X % coverage X APH)
– production X harvest price,0]

3 Total Revenue =
Sum (sales, RP payment)- Premium

USDA RP Indemnity Calculation Method

1 Sales = Production X (harvest price + basis)

Actual bushels per acre produced	Harvest price (announced in Nov.)	+ Basis	Cash Price	Sales
20.0	$8.16	($0.50)	$7.66	$153.20

USDA RP Indemnity Calculation Method

2 RP payment =
max [(max (strike price, harvest price) X % coverage X APH)
– production X harvest price,0]

Projected price (announced in March)	Harvest price (announced in Nov.)	% Coverage	APH	$ Guarantee
$10.16	$8.16	75%	40.0	$304.80

Actual bushels per acre produced	Harvest price (announced in Nov.)	Harvest Price X Yield, Dollars to Count	$ Guarantee	RP Payment
20.0	$8.16	$163.2	$304.80	$141.60

USDA RP Indemnity Calculation Method

3 Total Revenue =
Sum (sales, RP payment)- Premium

Sales	RP Payment	= Total Revenue,
$153.20	$141.60	$294.80

Why Separate Yield Loss from Price Loss in RP?

1. Separating price loss will isolate RP's put from the yield replacement coverage. Prevents farmers from thinking they have price protection as many corn farmers thought they had in 2012 when they cancelled their Harvest Price, assuming they had a $5.68 put.

2. Shows the deductible is never eliminated.

3. Indemnifies bushels at harvest price, providing yield replacement coverage that is only available with USDA reinsurance.

4. Identifies the source of the negative put values, making it very unlikely farmers will have a claim without a yield loss.

Split the RP indemnity for losses caused by yield vs. losses caused by price

1 Sales = Production X (harvest price + basis)

2 Yield replacement insurance =
max [(% coverage X APH) – production,0] X harvest price

3 "Put" Payment before Yield Adjustment
(Max (RP strike price - harvest price, 0) X guaranteed bushels) - Yield Adjustment

4 Asian "Put" adjusted for yield =
Max (production – bushels guaranteed, 0) X harvest price

5 Total Revenue =
Sum (sales, yield loss, price loss adjusted for higher yields)- Premium

Split the RP Soybean indemnity for losses caused by yield vs. losses caused by price

1 Sales = Production X (harvest price + basis)

Actual bushels per acre produced	Harvest price (announced in Nov.)	+ Basis	Cash Price	Sales
20.0	$8.16	($0.50)	$7.66	$153.20

Split the RP Soybean indemnity for losses caused by yield vs. losses caused by price

2 Yield replacement insurance =
max [(% coverage X APH) – production,0] X harvest price

APH	Cover-age level	Bushel guarantee	Actual bushels per acre produced	Bushels per acre loss	Harvest price (announced in Nov.)	**Indemnity for Yield Replace-ment Loss**
40.0	75%	30.0	20.0	10.0	$8.16	$81.60

RP "Put" based on guaranteed bushels vs. a fixed 5,000 bushels for CME traded puts

Split the RP Soybean indemnity for losses caused by yield vs. losses caused by price

3 "Put" Payment before Yield Adjustment
(Max (RP strike price - harvest price, 0) X guaranteed bushels) - Yield Adjustment

Project-ed price (announ-ced in March)	Harvest price (announ-ced in Nov.)	Put Gain	Bushel guarantee	"Put" Gain X Bushel guarantee	Price Loss Payment before Yield Adjustment
$10.16	$8.16	$2.00	30.0	$60.00	$60.00

Split the RP Soybean indemnity for losses caused by yield vs. losses caused by price

4 Asian "Put" adjusted for yield =
Max (production – bushels guaranteed, 0) X harvest price

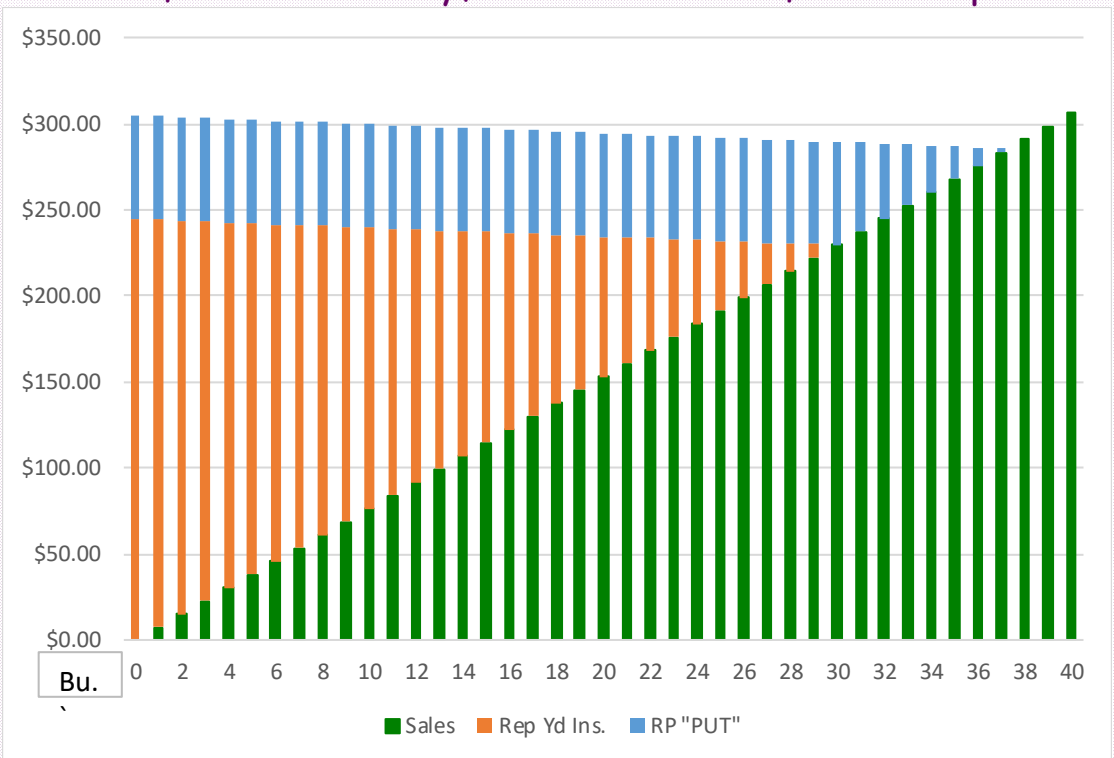
Actual bushels per acre produc-ed	Bushel guar-antee	Yield above Guar-antee	Harvest price (announced in Nov.)	Reduced Price Loss Payment Adjusted for Yield
20.0	30.0	0.0	$8.16	$0.00

Split the RP Soybean indemnity for losses caused by yield vs. losses caused by price

5 Total Revenue =
Sum (sales, yield loss, price loss adjusted for higher yields)- Premium

Sales	Payment, Yield Loss	Payment Price Loss	Price loss Adjusted for higher Yields	= Total Revenue, Less Premium
$153.20	$81.60	$60.00	$0.00	$294.80

Split RP Soybean indemnity by Yield Loss vs. Price Loss with "Put" $2 in the Money, APH = 40 bu. & $10.16 RP price



Split RP Soybean indemnity by Yield Loss vs. Price Loss with "Put" $2 out of the Money, APH = 40 bu. & $10.16 RP Price

Price and Volatility History for Crop Insurance with March 15 and Sep. 30 Sales Closing Dates[1]

	Mar 15 Corn				Mar 15 Soybeans				Sep 30 KC Wheat			
Year	RP Plant Price[2]	RP Harv. Price[3]	Vola-tility[4]	% Price Chan-ge[5]	RP Plant Price[2]	RP Harv. Price[3]	Vola-tility[4]	% Price Chan-ge[5]	RP Plant Price[2]	RP Harv. Price[3]	Vola-tility[4]	% Price Chan-ge[5]
2018	3.96		0.15		10.16		0.14		4.87	5.07	0.16	4.1%
2017	3.96	3.49	0.19	(11.9%)	10.19	9.75	0.16	(4.3%)	4.59	4.59	0.18	0.0%
2016	3.86	3.49	0.17	(9.6%)	8.85	9.75	0.12	10.2%	5.20	4.50	0.22	(13.5%)
2015	4.15	3.83	0.21	(7.7%)	9.73	8.91	0.16	(8.4%)	6.30	5.31	0.17	(15.7%)
2014	4.62	3.49	0.19	(24.5%)	11.36	9.65	0.13	(15.1%)	7.02	7.17	0.19	2.1%
2013	5.65	4.39	0.20	(22.3%)	12.87	12.87	0.17	0.0%	8.78	7.22	0.24	(17.8%)
2012	5.68	7.50	0.22	32.0%	12.55	15.39	0.18	22.6%	8.62	6.75	0.26	(21.7%)
2011	6.01	6.32	0.29	5.2%	13.49	12.14	0.23	(10.0%)	7.14	8.18	0.33	14.6%
2010	3.99	5.46	0.28	36.8%	9.23	11.63	0.20	26.0%	5.42	4.79	0.33	(11.6%)
2009	4.04	3.72	0.37	(7.9%)	8.80	9.66	0.31	9.8%	8.77	6.35	0.27	(27.6%)
2008	5.40	4.13	0.30	(23.5%)	13.36	9.22	0.31	(31.0%)	5.88	7.88	0.33	34.0%
2007	4.06	3.58	0.26	(11.8%)	8.09	9.75	0.19	20.5%	4.52	5.62	0.30	24.3%
2006	2.59	3.03	0.23	17.0%	6.18	5.93	0.21	(4.0%)	3.52	4.81	0.20	36.6%
2005	2.32	2.02	0.21	(12.9%)	5.53	5.75	0.21	4.0%	3.56	3.28	0.18	(7.9%)
2004	2.83	2.05	0.21	(27.6%)	6.72	5.26	0.21	(21.7%)	3.40	3.77	0.19	10.9%
2003	2.42	2.26	0.20	(6.6%)	5.26	7.32	0.18	39.2%	3.73	3.14	0.19	(15.8%)
2002	2.32	2.52	0.18	8.6%	4.50	5.45	0.16	21.1%	3.34	3.09	0.22	(7.5%)
2001	2.46	2.08	0.20	(15.3%)	4.67	4.37	0.16	(6.4%)	3.31	3.07	0.18	(7.3%)
2000	2.51	2.04	0.21	(18.7%)	5.32	4.72	0.20	(11.2%)	3.34	3.02	0.20	(9.6%)
1999[6]	2.40	2.01	0.14	(16.1%)	5.11	4.85	0.17	(5.1%)	3.16	2.84	0.21	(10.1%)

10% or More Corn-Soybean Price Change, Past 25 Years, Crop Insurance sales closing March 15

	Mar 15 Corn				Mar 15 Corn				Mar 15 Soybeans				Mar 15 Soybeans			
	Year	RP Plant Price	RP Harv. Price	% Price Chan-ge	Year	RP Plant Price	RP Harv. Price	% Price Chan-ge	Year	RP Plant Price	RP Harv. Price	% Price Chan-ge	Year	RP Plant Price	RP Harv. Price	% Price Chan-ge
1	2010	3.99	5.46	36.8%	2004	2.83	2.05	(27.6%)	2003	5.26	7.32	39.2%	2008	13.36	9.22	(31.0%)
2	2012	5.68	7.50	32.0%	2014	4.62	3.49	(24.5%)	2010	9.23	11.63	26.0%	2004	6.72	5.26	(21.7%)
3	1995	2.57	3.23	25.7%	2008	5.40	4.13	(23.5%)	2012	12.55	15.39	22.6%	1998	6.64	5.46	(17.7%)
4	2006	2.59	3.03	17.0%	1998	2.84	2.19	(23.0%)	2002	4.50	5.45	21.1%	1994	6.48	5.41	(16.5%)
5					2013	5.65	4.39	(22.3%)	2007	8.09	9.75	20.5%	2014	11.36	9.65	(15.1%)
6					1994	2.68	2.16	(19.5%)	1995	5.85	6.56	12.2%	2000	5.32	4.72	(11.2%)
7					2000	2.51	2.04	(18.7%)	2016	8.85	9.75	10.2%	2011	13.49	12.14	(10.0%)
8					1996	2.40	2.01	(16.1%)								
9					2001	2.46	2.08	(15.3%)								
10					2005	2.32	2.02	(12.9%)								
11					2017	3.96	3.49	(11.9%)								
12					2007	4.06	3.58	(11.8%)								

Soybean Revenue Protection Example

Ln	Split Yd-20 bu	Split Yd-30bu	Split Yd-35bu	
		Crop Sales		
1	20.0	30.0	35.0	Actual bushels per acre produced
2	$8.16	$8.16	$8.16	Harvest price (announced in Nov.)
3	($0.51)	($0.51)	($0.51)	+ Basis
4	$7.65	$7.65	$7.65	Cash Price
5	$153.00	$229.50	$267.75	Sales
		Indemity for Yield loss		
6	$10.16	$10.16	$10.16	Projected price (announced in Mar.)
7	40.0	40.0	40.0	APH
8	75%	75%	75%	Coverage level
9	30.0	30.0	30.0	Bushel guarantee
10	20.0	30.0	35.0	Actual bushels per acre produced
11	10.0	0.0	0.0	Bushels per acre loss
12	$8.16	$8.16	$8.16	Harvest price (announced in Nov.)
13	$81.60	$0.00	$0.00	**Indemnity for Yield Replacement Loss**

Soybean Revenue Protection Example

Ln	Split Yd-20 bu	Split Yd-30bu	Split Yd-35bu	
		Indemity for Price loss		
14	$10.16	$10.16	$10.16	Projected price (announced in Mar.)
15	$8.16	$8.16	$8.16	Harvest price (announced in Nov.)
16	$2.00	$2.00	$2.00	"Put" Gain
17	30.0	30.0	30.0	Bushel guarantee
18	$60.00	$60.00	$60.00	"Put" Gain X Bushel guarantee
19	$60.00	$60.00	$60.00	Price Loss Payment before Yield Adjustment
		"Put" Adjustement for Yield		
20	$60.00	$60.00	$60.00	Price Loss Payment before Yield Adjustment
21	20.0	30.0	35.0	Actual bushels per acre produced
22	30.0	30.0	30.0	Bushel guarantee
23	0.0	0.0	5.0	Yield above Guarantee
24	$8.16	$8.16	$8.16	Harvest price (announced in Nov.)
25	$0.00	$0.00	($40.80)	Reduced Price Loss Payment Adjusted for Yield
		Total Revenue		
26	$153.00	$229.50	$267.75	Sales
27	$81.60	$0.00	$0.00	Payment, Yield Loss
28	$60.00	$60.00	$60.00	Payment Price Loss
29	$0.00	$0.00	($40.80)	Price loss Adjusted for higher Yields
30	$294.60	$289.50	$286.95	= Total Revnue - Crop Insurance Premiums

Why Separate Yield Loss from Price Loss in RP?

1. CME Put options are in 5,000 bushel contracts vs. guaranteed bushels that adjust the RP's "puts" for farm size.
2. RP's "puts" have no time value.
3. RP's "puts" are settled on a average price vs. a spot price.
4. RP's "puts" only have intrinsic value.
5. RP's "puts" can't be exercised or cashed in early.
6. RP's "puts" take on negative values when yields exceed guaranteed bushels.

RP Yield Adjusted Asian Options vs. CME traded Options

1. RP's strike price is based on a monthly average price. CME trades in multiple strike prices.
2. RP's premiums are based on the last 5 trading days prior to the 15 days before RP sales closing. CME option premiums are continuously traded.

Why Separate Yield Loss from Price Loss in RP?

1. Indemnified bushels are paid at the harvest price to provide the value of the yield loss.
2. Lower harvest price reduces yield replacement indemnity payments (equation 2).
3. The replacement yield coverage (equation 2) is the only part of the RP guarantee that farmers can't cover privately.
4. Farmers can replace all of the put coverages (equations 2 & 3) by using CME contracts.

Critics Continue to Propose Cuts

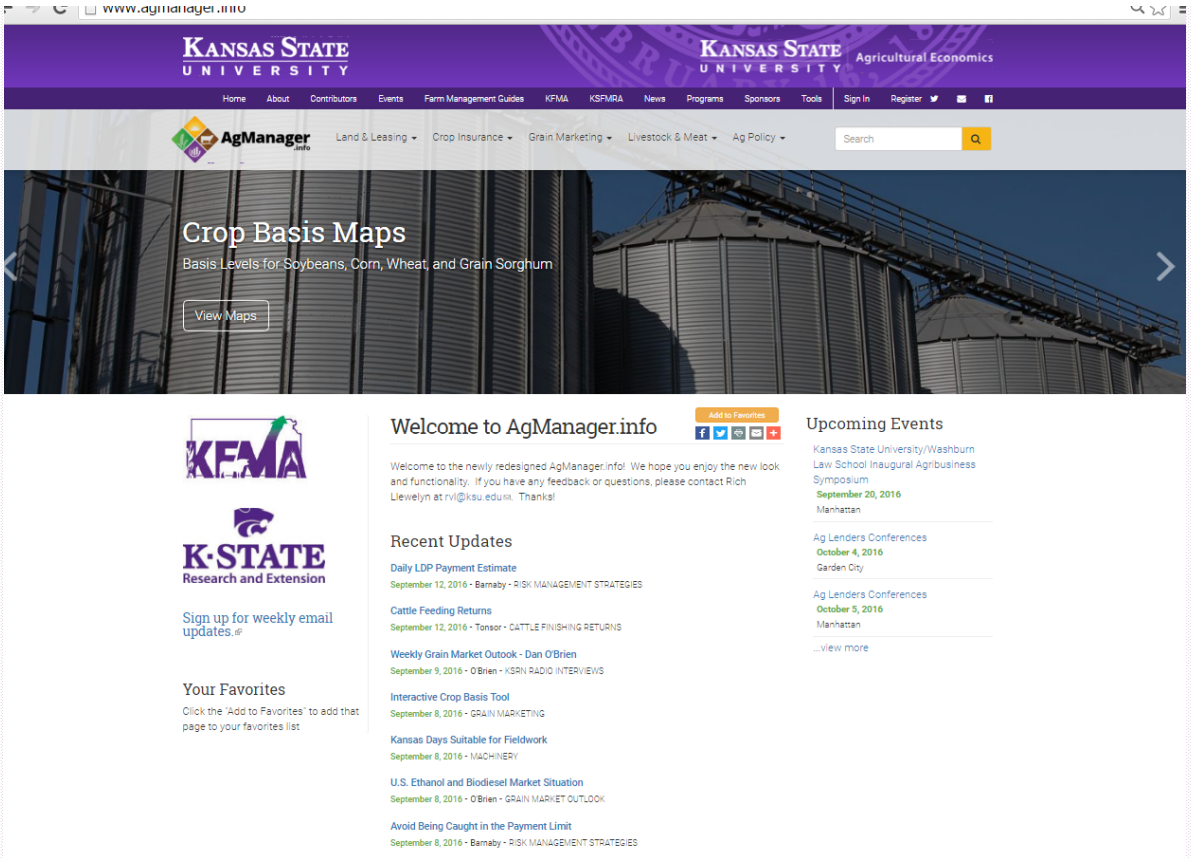
1. Limit subsidy dollars
2. Adjusted Gross Income Limit
3. Eliminate the harvest price option
4. If these cuts are made it is important that farmers keep their yield replacement coverage in equation 2, because that coverage is not available privately, "even" at a high price.
5. Farmers will want to apply any subsidy dollars to yield replacement because that coverage is not available privately.

RP's "Put" is Cheap Price Insurance

1. RP provides a cheap put, when yields are also low.
2. RP provides a floor under prices & yield.
3. Provides a starting point for crop sales covered by yield replacement. More corn years with a price decline from March 15.
4. RP's put is not a replacement for marketing.

What Did We Learn Today

1. RP options are adjusted for yield and can't be cashed in early.
2. Replacement bushel coverage provides a back stop to any marketing plan including cash sales off of the combine.
3. HPO replaces indemnity bushels at current market value.
4. All marketing plans including cash sales assume bushels.
5. HPO maintains the hedge.




Thank You
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