Administration's Proposed Crop Insurance Cuts Would Eliminate Harvest Price Option and Limit Farm Size[1]

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The Administration's budget would cut $58.7 billion from crop insurance or about $6 billion a year over 10 years. Over the last five years, the total share of the crop insurance premium cost paid by the Risk Management Agency (RMA) ("subsidy"), has been between $6 to $7 billion per year[2], with the balance paid by farmers. A $58.7 billion cut over 10 years would nearly eliminate the government's share of the premium cost. Therefore, these numbers only add up if there is a large reduction in the number of farmers buying crop insurance. It would require a reduction of about 70% in farmer participation in crop insurance. Would these cuts make the insurance program so bad that it would reduce participation by 70%? One would doubt that there would be a 70% reduction in participation, because one would expect farmers to hire accountants and lawyers to create new "paper farms". However, the reduction could be significant and likely in the lower risk states.

The administration's budget would save $38 billion by requiring a limit on premium "subsidy" to $40,000 per "farm". They would also eliminate the Harvest Price Option (HPO), saving $11.9 billion, based on their math. Their budget would eliminate crop insurance eligibility for any farm with an Adjusted Gross Income (AGI) greater than $500,000. Farmers would likely hit the $40,000 premium cost-share limit long before they hit the AGI limit.

Most of these cuts were in Congressmen Sensenbrenner (R-WI) and Kind's (D-WI) proposed legislation from past years. Similar legislation was introduced by Senator Jeff Flake (R-AZ). The members of Congress would have limited the AGI to $250,000, even lower than the Administration's proposed limit on AGI.

Subsidy Limit. On average it takes about 1,500 to 2,500 of all crop acres to hit the $40,000 cap, i.e. the government's share of the premium costs, depending on the year and state. About 20% of the Kansas farmers who participate in the Kansas Farm Management Association (KFMA) are over this limit on acres.

Once a farmer hits the $40,000 limit, the farmer would pay 100% of the premium cost for any covered acres above that level. This estimate is based on RMA published county-level crop insurance statistics by practice. The KSU estimate included all crops measured in acres, except for hay and grazing. Most of the hay/grazing acres are based on weather derivatives and the acres are very large. The data includes all area-based plans that are measured by acres too, such as Area Risk Plan (ARP). This data doesn't include contracts measured by trees or nurseries. However, the acre-based contracts account for nearly all of the insurance premium and includes all of the APH based products.

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[1]Prepared by G. A. (Art) Barnaby, Jr., Professor, Department of Agricultural Economics, K-State Research and Extension, Kansas State University, Manhattan, KS 66506, June 7, 2017.
[2]Source: RMA's Web page at https://www.rma.usda.gov/

The $40,000 cap results vary by state and by year. For example, in 2016, California would have required 542 crop acres to hit the $40,000 limit. By contrast, Kansas would have required 1,998 acres to hit the limit. The maximum acres before hitting the subsidy limit depends on the amount of the coverage and rate. The 2016 average amount of coverage in California was $2,608 per acre versus an average of $222 of coverage per acre for Kansas. The higher California liability was not offset by the lower premium rate that averaged 1.8% farmer-paid rate with an average subsidy per acre of $73.78. Kansas farmers paid an average rate of 5.6% with an average subsidy per acre of $20.02. The Kansas subsidy per acre is lower because the dollars of coverage are lower than California and this is the reason it requires more acres for the "average" Kansas farmer to hit the subsidy limit.

The number of acres required to hit the $40,000 limit also varies by year. For example, Kansas required an average of 1,998 acres in 2016, but only 1,417 acres to hit the subsidy limit in 2011. This means some farmers will hit the limit in some years, but not in other years. In years when they hit the limit, they will likely want to adjust their type and level of crop insurance coverage to stay under the limit. This is going to create an administrative nightmare for farmers, agents, insurance companies and RMA. The variability is even greater at the county and farm level.

In 2016, the Kansas Farm Management Association's (KFMA) average farm had 1,681 crop acres. Their average total acres were 2,427 acres[3]. This is an average across the entire state. In western Kansas, farmers tend to have more crop acres and higher premium rates, so the $40,000 limit would have a greater impact. However, the average farm in the KFMA is at the point where it would exceed the $40,000 limit in some years, but not in other years. Those KFMA farmers with above-average crop acres would be impacted immediately.

Crop Acres Required to Hit $40,000 Limit in Other States. Figure 1 shows instructions to operate an interactive map that shows the average number of crop acres to hit the $40,000 limit by state by year. This is based on current crop insurance coverage purchases for all states. The link is at: http://www.agmanager.info/crop-insurance/acres-reach-40k-cap-state-and-year

Many farmers will likely make adjustments to avoid the subsidy limit. As a first step, they will likely create new "paper" farms. If they have a spouse, then farmers will try to get a second policy for their spouse and divide the acres between two "farms". This will double the paperwork for the whole system, including agents, AIPs and RMA, with no new premium. Some farmers may encourage their landlords to change from cash rent to crop share rent in order to stay under the subsidy limit. "Big" farmers will likely hire accountants and lawyers to create more entities. This will expand the administrative cost for farmers as these entities must be kept separate. and of course more paper work for RMA, agents and AIPs with no new premium.

Farmers who are still over the limit may choose to cut coverage to stay under the limit. If still available, they could eliminate the HPO to get under the limit. They could also lower their

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[3]Source: Executive Summary 2016 Profitlink Analysis, "Kansas Farm Management Association", https://www.agmanager.info/kfma/executive-summaries/2016-executive-summary

percent coverage level. They might decide to insure their corn but leave their soybeans uninsured or only insure with CAT, which has a 100% premium subsidy.

Eliminate the Harvest Price Option. The argument that the HPO overpays farmers is a half-truth. When the harvest price is just a penny higher than the projected price, Revenue Protection (RP) insured farmers must have an insurable yield loss to trigger any indemnity payment. For most corn farmers that will require a 22-25% yield loss to collect anything (20% deductible + 2%-5% farmer-paid premium). For example, an Iowa corn farm with an APH equal to 184 bushel would need a yield loss greater than 37 bushels to trigger either an RP or Yield Protection (YP) contract indemnity. A farmer expecting a 185-bushel corn yield will need a yield below 148 bushels to receive any indemnity payment from YP or RP when the harvest price is higher.

In 2012, crop insurance critics argued that corn farmers were overpaid by RP.   The fact is that all 2012 RP corn claims require an insurable yield loss to collect any indemnity payment. When the harvest price increases, the indemnity calculations are the same for YP and RP, except that YP indemnifies the lost bushels at the projected price set 6 months earlier, while RP indemnifies the lost bushels at the current market price (harvest price).

An Iowa corn example was created in Table 1 to show the calculations for a 2012 claim for an Iowa farmer with a 185 bushel APH who produced a half of a crop. In this example, the Iowa corn farmer produced half of a crop or 92 bushels. An 80% coverage Yield Protection (YP) insured farmer would have had a guarantee equal to 148 bushels (80% X 185 bu. APH, on line 3, Table 1). If the grower suffered a crop loss of 93 bushels in 2012 (line 7, Table 1), the grower would be left with half of a crop equal to 92 bushels (line 6, Table 1).   YP would pay the difference between the 185 bushels, less the 37 deductible bushels on line 4, and the production on line 6, equals 56 bushels that are indemnified.

YP and RP Calculations. YP and RP calculations are identical through line 8 when the harvest price is equal or higher than the projected price. Both contracts require a yield loss of 37 bushels or more to trigger any payment. There are no exceptions. The only difference is in the indemnity payment rate. A more accurate name for the harvest price is replacement price, because when prices increase as they did in 2012, RP replaces lost bushels minus the deductible times the replacement price of $7.50 in 2012. YP indemnified the indemnity bushels at the projected price of $5.68 (line 9, Table 1).

In 2012, the current corn price was $7.50 and at that price, RP replaced 53.3 bushels of the 93 bushels of lost production ($399.82 net indemnity/$7.50). YP replaced 40.3 bushels of the 93 bushels of lost production ($302.11 net indemnity/$7.50) on line 16, Table 1.

When prices increase, RP (like YP) requires an insurable yield loss to trigger any payment. To suggest that RP insured corn farmers in 2012 were paid indemnity payments without a loss is simply not true. In the typical Iowa corn grower example, the producer lost 93 bushels below the expected production of 185 bushels. RP only replaced 53.3 of the 93 bushels lost. That is a loss calculated using "real world" arithmetic!

Indemnity Calculations in Dollars vs. Bushels. In RMA's most recent Corn Fact Sheet-2017 Crop Year, RMA has changed their YP bushel calculation to a dollar calculation[4]. This does not change the result, as it still requires an insurable yield loss for YP to trigger any payments. However, by calculating the YP indemnity payment in dollars it allows RMA to calculate the indemnity payments for RP and Revenue Protection with HPO Excluded (RP-hpe) in the same Fact Sheet.

The YP calculations are the same through line 9, Table 1, whether calculations are completed in dollars or bushels. The YP dollars of coverage are the same on line 6 and 11, Table 1. When calculating YP in dollars, one deducts the value of production from the dollars of coverage rather than deducting bushels produced from the guaranteed bushels. However, the YP indemnity payment is the same on line 10 and line 13 using either a dollar or bushel calculation.

YP has two differences in the calculations for YP versus RP and RP-hpe. First, RP and RP-hpe calculate the value of production based on the harvest price rather than the YP method that bases the value of production on the projected price. The value of production based on a projected price that is 6 months old does not make a lot of sense. The value of production one would think is the value of harvested corn based on current price, and not an estimated price. However, one has to make this math adjustment to the "value of production" in order for the bushel-calculated and dollar-calculated indemnity to be the same for YP. A YP indemnity payment calculated in dollars is the difference between the insurance guarantee on line 11 and value of production on line 12, Table 1 and was equal to $318.08. After farmer-paid premiums are deducted, the net YP indemnity payment calculated both ways are the same on line 16, Table 1.

Replacement Coverage. When the harvest price is greater than the projected price, RP becomes a yield replacement contract. The RP calculated in dollars will have the dollars of coverage on line 11. This is the result of multiplying the APH (185 bu. Line 1) X coverage (80% line 2) X the higher of projected price ($5.68 line 5) or harvest price ($7.50 line 9) equal to $1,110 on line11. The value of production is equal to the harvest price ($7.50 line 9) X bushels produced (92 bu. line 6) equal to $690 on line 12, Table 1. The RP indemnity payment is the difference between the coverage on line 11 and the value of production on line 12, equal to the indemnity payment on line 13. The net RP payment is after the farmer-paid premium is deducted, line 16, Table 1.

The net indemnity payments on line 16 were $302.11 for YP, $399.82 for RP and $136.35 for RP-hpe. Payments were greater under RP than YP because RP replaced lost bushels at current market value rather than the projected price under YP. RP-hpe eliminates the yield replacement feature leaving only a revenue guarantee and higher prices reduce revenue-based indemnity payments.

Private Harvest Price Option. It has been argued that the HPO should be a private sector product only. Critics claim the private sector did offer the HPO under the trade name Market Value Protection (MVP)[5]. However, the MVP did not provide the same level of protection as the HPO when added to RP-hpe to create the RP contract in the year 2000. In the example, in Table 1, MVP paid the difference between RP and YP, or $101.02 ($420 -$318.08 = $101.02, line 13). The HPO covers the MVP loss plus the yield loss that is the difference between YP and RP-hpe, or $167.44 ($318.08 -$150.64 = $167.44). The HPO adds a total of $269.36 to the RP-hpe payment ($101.02 + $167.44 = $269.36). The private MVP would only have paid $101.02, but the HPO would add another $167.44 to the indemnity payment for a total of $269.36 as private insurance, and the RMA re-insured RP-hpe insurance would only have paid $150.64. This means the private HPO product would pay more than the RMA product ($269.36 private vs. $150.64 public) under the half of a crop scenario. Because the HPO would be private, farmers would pay 100% of the premium cost plus the expense load.

The elimination of the HPO price would hurt Illinois more than Kansas because the price risk is a greater share of the Illinois revenue risk. However, loss of the HPO would cut the coverage for nearly all grain farmers in Illinois and Kansas because most revenue-insured farmers take the HPO. Over the last 25 years, Illinois corn has had 22 years of underwriting gains, leaving only 3 years with underwriting losses.   Those years were 2005 with a $22 million loss, 2013 with a $42 million, and a whopping $2.868 billion dollar underwriting loss in 2012[6]!

This means that some of those Illinois corn farmers likely paid premiums for 20 years or more with little or no losses. However, Illinois corn growers were hit really hard in 2012, with a nearly $2.9 billion underwriting loss. Elimination of the HPO would have cut those 2012 claims in the very year Illinois corn farmers needed the help. Without the HPO covering the 2012 Illinois catastrophic corn loss, farmers' indemnity payments would have been reduced or eliminated. If crop insurance is not going to cover a catastrophic year like 2012, then it doesn't make much sense for these farmers in low-risk counties to purchase crop insurance.

If public policy were to eliminate the HPO, it would likely cost farmers more than double their current premiums to get the equivalent coverage of RP, that is, if a company were to offer the HPO coverage in your state and on your crop. Likely a private HPO would be offered on corn and soybeans in the Corn Belt states. A private HPO is unlikely to be offered in states like Oklahoma and Texas.

Why Farmers Prefer the Harvest Price Option. Based on RMA data, about 99% of all revenue insurance contracts sold include the HPO. The reason is simple: once farmers plant their crop, they are long the market. There are no exceptions. Because RP is a yield replacement contract, farmers will either produce bushels, or the contract will replace the bushels lost below the guarantee at current market value.

At some point farmers will get out of the long position because they will either sell bushels or feed those bushels to livestock; i.e. selling their corn through their livestock. Dairy and

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[5]The author worked under contract with Rick Gibson and company to develop the MVP contract released in 1991 on corn and soybeans.
[6]Source: RMA's Web page at https://www.rma.usda.gov/

livestock producers who feed all of their corn will need to replace their feed supply at current market value, and only the RP replaces those bushels at current prices, less deductible and farmer-paid premium. RP replacement coverage will maintain the hedge for farmers, because they will either have bushels to sell or enough RP indemnity dollars to offset margin losses or to fill a forward contract, assuming farmers don't sell more than their guaranteed bushels. The same is true for a put, storing the grain for later sale or selling cash grain off of the combine. All of these farmer marketing plans, including crop sales through livestock, assume production, because if the plan doesn't require production then there is no need to farm, just trade the market.

Assuming Congress does not change the RP contract, it allows farmers to consider longer-run hedging strategies when prices are high. If corn prices were to make a major price move to six dollars this summer, then one could sell this year's crop and next year's crop too, and RP will maintain the hedge. In the fall of both 2017 and 2018, farmers will either produce the bushels or any bushels lost will be replaced at the market value. We don't know the price in the fall of 2017 or 2018, but because RP will replace any lost bushels at current market value, any RP indemnity payment that is triggered will offset margin losses and maintain the hedge.

What Happens When Prices Fall. In 2014 the projected corn price of $4.62 fell to $3.49 at harvest time. Under the scenario of half of a crop, the YP generates the smallest payment on line 13, Table 2. Both RP contracts pay the same, except for farmer-paid premium costs (line 13, Table 2). If the farm had produced a yield equal to the insurable yield of 148 bushels then YP pays nothing. However, both RP products pay $167.24 before farmer-paid premiums (line 13, Table 3). This payment was caused by the price peril only, as the yield coverage didn't trigger.

The administration's budgets also include an Adjusted Gross Income (AGI) limit of $500,000 but the $40,000 cap on the government's premium cost share will hit farmers long before the AGI limit. The exception would be farmers with large non-crop income; e.g. oil, cattle, off-farm employment, etc.

Public Policy Questions. This case creates some interesting public policy questions. When prices fall, revenue insurance often overlaps with other government payments because those programs trigger payments when prices are low including payments from Price Loss Coverage (PLC), Loan Deficiency Payments (LDP) and in many cases Agriculture Risk Coverage (ARC). In addition, the hedged farmers will also show gains in their brokerage account. The critics have incorrectly claimed that the HPO in RP competes with other USDA farm safety net programs and the CME, but it is clearly the opposite.

When prices increase, farmers receive few if any government payments, hedged farmers have margin losses, and higher prices reduce or eliminate revenue indemnity payments. Those farmers with the HPO will have their lost bushels, less the deductible, replaced at their current market value offsetting margin losses and loss of government payments. When farmers have a crop failure and prices increase, farmers will lose their PLC payment when they most need it because they have nothing to sell at the higher prices.

It is important to remember that even in a bad year causing higher prices, not all farmers have a crop failure. Those farmers who don't have a crop failure will have very "high" incomes and make the average U.S. farm income high. This is the problem with making public policy decisions based on averages. Crop insurance targets the payment to only farmers who have losses. In 2012, all corn farmers who collected APH-based crop insurance payments had a crop loss that on average exceeded 20% of their average production. There are no exceptions under the APH plans.

If all of these crop insurance changes were to pass, it will kill crop insurance. Why would Illinois corn farmers even buy crop insurance without the HPO? Area Risk Plan (old GRIP) was introduced without the HPO. West central, Illinois had a drought in a few counties and GRIP didn't pay because the price increased. Next year GRIP offered the HPO. For 2018, RMA just announced they have added the HPO to the area-based Margin Protection (MP) contract. The same result, but on a larger scale was true for 2012 Illinois corn. However, most Illinois corn farmers had the HPO in 2012.

Is the Debate over Budget or Elimination of Crop Insurance? One wouldn't expect the critics will get all of the changes they are asking for, but just one of these changes could upset the equilibrium in the insurance program and start the death spiral.   The $40,000 limit on the government share of the premium or the elimination of the HPO will likely start the decline.

All of the critics conveniently forget about farmer-paid premiums. In a low-risk state like Illinois, many of those farmers have paid premiums for years without a loss, and now they want to eliminate the 2012 indemnity payments by eliminating the HPO. Next time these guys are out of Washington they should ask a real farmer, does crop insurance feel like a subsidy when one is writing a premium check that is paid in most years because farmers don't have a loss? It appears Heritage really wants to shut down USDA, but some of these other groups just want to eliminate private crop insurance delivery and provide disaster aid based on an area plan through FSA.

All of the groups in this fight that includes farmers, agents, AIPs, and ag lenders will need to hang together. If the critics can split the coalition that also includes food programs, they will win the fight. If one remembers last time, they asked for these same cuts plus conservation compliance requirements. As a compromise, Congress required conservation compliance, but didn't include the $40,000 cap on the government's share of the premium. What does a compromise require this time? Will it require the elimination of the HPO in order to prevent the $40,000 subsidy cap? Keep chipping away and at some point the insurance pool kills itself.

If this debate is over crop insurance, then making these changes to the program will likely make the program ineffective, and over time farmers will drop their coverage. However, if the debate is over taxpayers' cost for the program, then there are other alternatives. Rather than make changes to a program that by most measures is working as intended, simply reduce the government's share of the premium cost. Prior to 1995, the government only paid about 25% of the premium cost for corn. After many ad hoc disaster programs, crop insurance was once again reformed to eliminate the call for ad hoc disaster aid in 2000.   This legislation required the government to pay a share of the premium cost that included the price peril. As a result, the government's share of the premium increased to 57% of the total premium for corn. After

2009 the government's share of the premium increased to 60-62% of the total premium for corn. The 2009 increase was likely caused by many farmers moving to enterprise units.

It has taken more than 30 years to create an insurance product that farmers want to buy. There was a major crop loss in 2012 during a Presidential election year without a call for ad hoc disaster aid, meeting one of the goals identified in the 2000 legislation. So Congress should not rush to make changes to a crop insurance program that has finally found a market.

So if it is a budget issue, what is the alternative? One alternative is to reduce the share of the premium paid by government rather than mess with the coverage that farmers prefer. So then the question is how much can policy makers reduce the government share of the premium and still maintain a politically acceptable level of participation to prevent calls for ad hoc disaster aid? In the early 1990's 25% of the premium was being paid by the government, but it was not sufficient to prevent ad hoc disaster aid[7]. Because the product has had many improvements since the 1980's and 1990's, a small reduction in the government's share of the premium, say 5 points, may reduce participation very little.   The key is to not increase farmers' share of the premium to a level that creates a political demand for ad hoc disaster aid with the next crop failure.

If Congress were to greatly increase farmers' share of the premium cost, causing a reduction in insured acres to a 1/3 of the planted acres, similar to the participation prior to 1995, then most farmers would expect an ad hoc disaster program to be provided. If most farmers are uninsured and there is still an expectation of an ad hoc disaster program, that will limit the amount of any reduction in the governments' share of the premium costs. While this would be a very difficult vote for members of Congress because it would raise the farmer's share of the premium by 5 points, I would argue the damage to participation would be far less than would be the case for the changes proposed by the administration. The question is how elastic is the demand for crop insurance? That elasticity is based both on product value and price. This issue is being debated by economists.

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[7]Source: RMA's Web page at https://www.rma.usda.gov/

Figure 1. Estimated number of crop acres needed to hit proposed USDA premium limit of $40,000 with all remaining premium cost paid by farmers. All of the premium cost that exceed the limit would be paid by farmers, in addition the share of the premium cost paid by farmers on insured acres that are below the limit.**
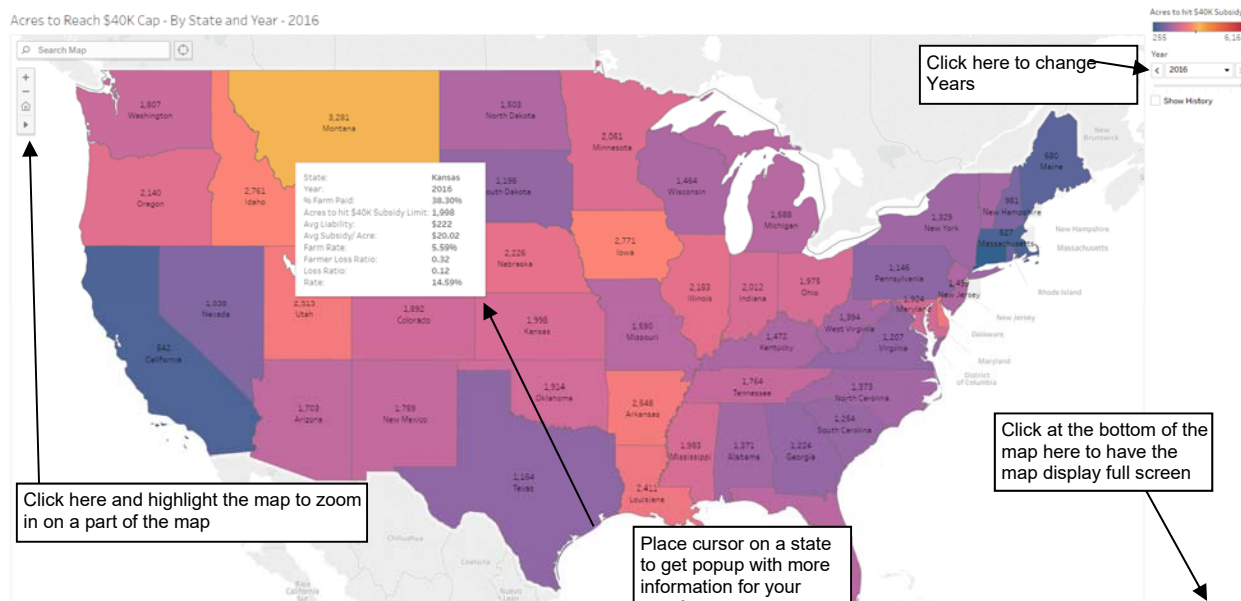
**Inter active map created by Dr. Rich Llewelyn, Department of Agricultural Economics, Research and Extension, Kansas State University.
http://www.agmanager.info/crop-insurance/acres-reach-40k-cap-state-and-year

Table 1. Yield Protection vs. Revenue Protection on 2012 Corn*

		Loss Calculated in Bushels			Same Loss Calculated in Dollars[1]	
		YP	RP	YP	RP	RP-hpe
1	Average Iowa APH yield[2]	185	185	185	185	185
2	Coverage level	80%	80%	80%	80%	80%
3	Bushel guarantee	148	148	148	148	148
4	Deducted bushels	37	37	37	37	37
5	Projected price	$5.68	$5.68	$5.68	$5.68	$5.68
6	Insurance guarantee	$840.64	$840.64	$840.64	$840.64	$840.64
6	Bushels per acre produced	92	92	92	92	92
7	Bushels lost below Expected	93	93	93	93	93
8	Bushels Indemnified	56	56			
9	Indemnity-Harvest Price[3]	**$5.68**	**$7.50**	$5.68	$7.50	$7.50
10	Gross indemnity	$318.08	$420.00			
11	Insurance guarantee			$840.64	$1,110.00	$840.64
12	Value of production[4]			$522.56	$690.00	$690.00
13	Gross indemnity			$318.08	$420.00	$150.64
14						
15	Avg. IA Farmer Paid Premium[5]	$15.97	$20.18	$15.97	$20.18	$14.29
16	Net Indemnity Payment	$302.11	$399.82	$302.11	$399.82	$136.35
17	# Replaced Bu. Of 93 Bu. Lost			40.3	53.3	18.2

[1]Risk Management Agency Kansas Corn Fact Sheet 2017 Crop Year, Topeka Regional Office-Topeka, KS: Revised February 2017, RMA Website link: https://www.rma.usda.gov/fields/ks_rso/2017/kscorn.pdf

[2]The Iowa APH was calculated from the aggregated summary of business data posted on RMA's Website. The APH will change some from year to year and those farmers that buy higher coverages tend to have higher APHs. In Iowa the average APH for 80% coverage buyers was 185 bushels versus 200 bushels for those who buy 85% coverage.

[3]The Indemnity Price for Yield Protection is the projected price set at signup. The Indemnity Price for Revenue Protection is the harvest price set at harvest. The prices used in the example are for Iowa corn in 2012 and 2014.

[4]Critics often cite RMA published examples of payment calculations where RMA values the bushels produced at the harvest time futures price. In the "real world" a crop that has drought or other weather damage will have dockage at the elevator. Normally a weather damaged crop is not of number 1 quality. Grain produced will likely have light test weights, insect damage, alpha toxins, disease and other issues. While in theory crop insurance covers quality losses, in most cases the cash discounts for quality losses far exceed any crop insurance compensation for quality discounts on grain.

[5]Farmer Paid Premiums were calculated from the aggregated summary of business data posted on RMA's Website. Rates used were the average rate for Iowa farmers buying coverage in 2012.

 *Prepared by G. A. (Art) Barnaby, Jr., Professor, Department of Agricultural Economics, K-State Research and Extension, Kansas State University, Manhattan, KS 66506, June 7, 2017.

Table 2. Yield Protection vs. Revenue Protection on 2014 Corn*

		Loss Calculated in Bushels			Same Loss Calculated in Dollars[1]		
		YP	RP	|	YP	RP	RP-hpe
1	Average Iowa APH yield[2]	185	185	|	185	185	185
2	Coverage level	80%	80%	|	80%	80%	80%
3	Bushel guarantee	148	148	|	148	148	148
4	Deducted bushels	37	37	|	37	37	37
5	Projected price	$4.62	$4.62	|	$4.62	$4.62	$4.62
6	Insurance guarantee	$683.76	$683.76	|	$683.76	$683.76	$683.76
				|			
6	Bushels per acre produced	92	92	|	92	92	92
7	Bushels lost below Expected	93	93	|	93	93	93
8	Bushels Indemnified	56	N/A	|			
9	Indemnity-Harvest Price[3]	**$4.62**	N/A	|	$4.62	$3.49	$3.49
10	Gross indemnity	$258.72	N/A	|			
				|			
11	Insurance guarantee			|	$683.76	$683.76	$683.76
12	Value of production[4]			|	$425.04	$321.08	$321.08
13	Gross indemnity			|	$258.72	$362.68	$362.68
14				|			
15	Avg. IA Farmer Paid Premium[5]	$12.99	N/A	|	$12.99	$16.41	$11.62
16	Net Indemnity Payment	$245.73	N/A	|	$245.73	$346.27	$351.06
17	# Replaced Bu. Of 93 Bu. Lost				70.4	99.2	100.6

[1]Risk Management Agency Kansas Corn Fact Sheet 2017 Crop Year, Topeka Regional Office-Topeka, KS: Revised February 2017, RMA Website link: https://www.rma.usda.gov/fields/ks_rso/2017/kscorn.pdf

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Table 3. Yield Protection vs. Revenue Protection on 2014 Corn with No Insurable Yield loss*

		Loss Calculated in Bushels		Same Loss Calculated in Dollars[1]		
		YP	RP	YP	RP	RP-hpe
1	Average Iowa APH yield[2]	185	185	185	185	185
2	Coverage level	80%	80%	80%	80%	80%
3	Bushel guarantee	148	148	148	148	148
4	Deducted bushels	37	37	37	37	37
5	Projected price	$4.62	$4.62	$4.62	$4.62	$4.62
6	Insurance guarantee	$683.76	$683.76	$683.76	$683.76	$683.76
6	Bushels per acre produced	148	148	148	148	148
7	Bushels lost below Expected	37	37	37	37	37
8	Bushels Indemnified	0	N/A			
9	Indemnity-Harvest Price[3]	**$4.62**	N/A	$4.62	$3.49	$3.49
10	Gross indemnity	$0.00	N/A			
11	Insurance guarantee			$683.76	$683.76	$683.76
12	Value of production[4]			$683.76	$516.52	$516.52
13	Gross indemnity			$0.00	$167.24	$167.24
14						
15	Avg. IA Farmer Paid Premium[5]	$12.99	N/A	$12.99	$16.41	$11.62
16	Net Indemnity Payment	($12.99)	N/A	($12.99)	$150.83	$155.62
17	# Replaced Bu. Of 93 Bu. Lost			0.0	43.2	44.6

[1]Risk Management Agency Kansas Corn Fact Sheet 2017 Crop Year, Topeka Regional Office-Topeka, KS: Revised February 2017, RMA Website link: https://www.rma.usda.gov/fields/ks_rso/2017/kscorn.pdf

[2]The Iowa APH was calculated from the aggregated summary of business data posted on RMA's Website. The APH will change some from year to year and those farmers that buy higher coverages tend to have higher APHs. In Iowa the average APH for 80% coverage buyers was 185 bushels versus 200 bushels for those who buy 85% coverage.

[3]The Indemnity Price for Yield Protection is the projected price set at signup. The Indemnity Price for Revenue Protection is the harvest price set at harvest. The prices used in the example are for Iowa corn in 2012 and 2014.

[4]Critics often cite RMA published examples of payment calculations where RMA values the bushels produced at the harvest time futures price. In the "real world" a crop that has drought or other weather damage will have dockage at the elevator. Normally a weather damaged crop is not of number 1 quality. Grain produced will likely have light test weights, insect damage, alpha toxins, disease and other issues. While in theory crop insurance covers quality losses, in most cases the cash discounts for quality losses far exceed any crop insurance compensation for quality discounts on grain.

[5]Farmer Paid Premiums were calculated from the aggregated summary of business data posted on RMA's Website. Rates used were the average rate for Iowa farmers buying coverage in 2012.

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