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Yield Exclusion: Description and Guidance

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The Yield Exclusion (YE) allows specific years to be dropped from the calculation of guarantee yields for crop insurance. This option is available because of provisions contained in the 2014 Farm Bill. This article describes YE, provides an example of Actual Production History (APH) yield calculation and premium quotation under YE, and provides guidance for YE's use. As a practical matter, most farmers should take YE when it is available and raises the guarantee yield, as long as it does not impact their trend adjustment eligibility. The same material is covered in a YouTube video available [here](#).

What is the Yield Exclusion?

Each county may have specific years that can be excluded from the APH yield calculation. To be excluded, the county or its contiguous counties has to have a yield for a year below 50% of the average of the previous 10-years of county yields. The determination of county-year combinations eligible for exclusion is done by the Risk Management Agency (RMA) and made available in their actuarial documents. Information and maps from RMA are available [here](#).

For some Illinois counties, yield exclusions are available for 1995, 2002, 2005, and 2012. By far, more counties are eligible for exclusions in 2012 than any other year (see Figure 1). Appendix Table 1 shows all years of exclusion for corn in Illinois.

For soybeans, yield exclusions exist for a limited number of counties in southern Illinois (see Appendix Table 2).

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**Figure 1. Counties where Yield Exclusion Exists for 2012, Corn
(Shaded (blue) counties have YE in 2012)**



Calculating the TA-APH yields

Table 1 shows an example of calculating Trend-Adjusted APH (TA-APH) yields without and with YE. In many cases, the TA-APH yield is the guarantee yield that is used to establish guarantees. This example is in McLean County and has actual yields for 2005 through 2014. When all years are included, APH yield for all years is 176 bushels per acre and TA-APH yield is 186 bushels per acre. The yield exclusion can be taken for 2012. Excluding the 2012 yield raises the TA-APH yield to 194 bushels per acre. This producer will likely take advantage of YE because an increase in the TA-APH yield occurs under YE.

Table 1. Example of Yield Calculation when Yield Exclusion is Available for 2012.


Year	Actual Yield	TA-APH Yield ¹	
		without YE	with YE
	\$/bu.	\$/bu.	\$/bu.
2005	161	179	179
2006	182	198	198
2007	196	211	211
2008	190	203	203
2009	186	197	197
2010	170	179	179
2011	160	167	167
2012	110	115	
2013	189	193	193
2014	220	222	222
APH Yield	176		
TA-APH		186	194

¹ Trend increase is 1.83 bushels per acre.

Quoting with YE


Premium quotes for YE can be obtained from the *2015 Crop Insurance Decision Tool*, as is illustrated for the above McLean County example. Without YE, the APH yield and rate yield equal 176 bushel per acre, and the TA-APH yield is 186 bushels. Figure 2 shows a premium quote without YE.

Figure 2. Quote from 2015 Crop Insurance Decision Tool, Without YE.

State: Illinois		2015 iFARM Premium Calculator										
County: McLean		Date Printed: 1/7/2015										
Crop: Corn												
Individual Farm Level Policies		Print		Help								
		TA APH		Menu								
Quote input -->		APH Yield: 176.0		Use TA adjustment: Yes								
		TA Yield: 186.0		Rate yield: 176.0								
		Risk class: None										
Acres: 100		Type: Grain		Practice: Non-Irrigated								
		Prevented planting: Standard										
Coverage Level	Revenue Protection				Revenue Protection with Harvest Price Exclusion				Yield Protection			
	Enterprise	Basic	Optional	Minimum Revenue Guarantee	Enterprise	Basic	Optional	Revenue Guarantee	Enterprise	Basic	Optional	Yield Guarantee
	\$ per Acre			\$/acre	\$ per Acre			\$/acre	\$ per Acre			Bu./acre
50%	0.49	0.99	1.41	430	0.38	0.81	1.13	430	0.48	0.80	1.17	93.0
55%	0.67	1.57	2.16	473	0.43	1.14	1.51	473	0.66	1.19	1.67	102.3
60%	0.96	2.29	2.95	516	0.47	1.40	1.76	516	0.88	1.58	2.12	111.6
65%	1.41	3.81	4.65	559	0.52	1.98	2.51	559	1.18	2.42	3.08	120.9
70%	2.04	5.38	6.29	602	0.71	2.65	3.12	602	1.50	3.08	3.75	130.2
75%	3.54	8.50	9.53	644	1.19	3.90	4.32	644	2.15	4.21	4.94	139.5
80%	7.80	14.54	15.54	687	2.84	6.48	6.83	687	3.79	6.15	6.89	148.8
85%	15.95	23.46	24.32	730	6.17	10.56	10.72	730	6.73	8.87	9.59	158.1
Parameters		Projected Price: \$4.62		Volatility (revenue): 0.19		Volatility (rev with exclusion): 0.19		Parameters				

With YE, the rate yield and the APH yield is 176 bushels and the TA-APH yield is 194 bushels per acre. Figure 3 shows premium under YE.

Figure 3. Quote from 2015 Crop Insurance Decision Tool, With YE.

State: Illinois		2015 iFARM Premium Calculator										
County: McLean		Date Printed: 1/7/2015										
Crop: Corn												
Individual Farm Level Policies		Print		Help								
		TA APH		Menu								
Quote input -->		APH Yield: 176.0		Use TA adjustment: Yes								
		TA Yield: 194.0		Rate yield: 176.0								
		Risk class: None										
Acres: 100		Type: Grain		Practice: Non-Irrigated								
		Prevented planting: Standard										
Coverage Level	Revenue Protection				Revenue Protection with Harvest Price Exclusion				Yield Protection			
	Enterprise	Basic	Optional	Minimum Revenue Guarantee	Enterprise	Basic	Optional	Revenue Guarantee	Enterprise	Basic	Optional	Yield Guarantee
	\$ per Acre			\$/acre	\$ per Acre			\$/acre	\$ per Acre			Bu./acre
50%	0.55	1.15	1.62	448	0.40	0.90	1.23	448	0.55	0.91	1.31	97.0
55%	0.82	1.95	2.59	493	0.45	1.28	1.65	493	0.78	1.40	1.92	106.7
60%	1.17	2.78	3.47	538	0.48	1.54	1.95	538	1.02	1.84	2.41	116.4
65%	1.75	4.66	5.55	583	0.62	2.35	2.86	583	1.36	2.79	3.46	126.1
70%	2.61	6.70	7.63	627	0.89	3.17	3.55	627	1.72	3.52	4.19	135.8
75%	4.83	11.07	12.02	672	1.70	4.96	5.30	672	2.52	4.93	5.60	145.5
80%	9.62	17.60	18.46	717	3.64	7.87	8.13	717	4.28	6.95	7.61	155.2
85%	19.81	28.71	29.23	762	7.88	12.98	12.88	762	7.73	10.20	10.71	164.9
Parameters		Projected Price: \$4.62		Volatility (revenue): 0.19		Volatility (rev with exclusion): 0.19		Parameters				

Guidance

Farmers will generally find it to their advantage to take YE when the TA-APH yield increases. Taking YE does not change the total premium for the same guarantee level. If \$730 per acre is the guarantee with and without YE, both alternatives will have the same total premium. However, the farmer-paid premium can be lower because subsidy levels often are higher for lower coverage levels. Because a lower coverage level results in a higher guarantee under YE, YE farmer-paid premium quotes can be lower than non-YE quotes for the same coverage level.

Table 2 shows premiums and guarantees with and without YE for the McLean County example quoted above. Consider an 80% quote and note that without YE, RP at 80% coverage level has a \$7.80 farmer-paid premium and a \$687 guarantee. With YE, an 80% coverage level has a higher premium at \$9.62 per acre, but a guarantee that is \$30 per acre higher at \$717 per acre. If the producer wants to maintain roughly a \$687 guarantee (80% coverage level without YE), the coverage level can be dropped to 75% with YE, resulting in a \$4.82 per acre farmer-paid premium.

Table 2. Premiums and Guarantee, Without and With Yield Exclusion.

Coverage Level	Without Exclusion		With Exclusion	
	Premium	Guarantee	Premium	Guarantee
	\$/acre	\$/acre	\$/acre	\$/acre
50%	0.49	430	0.55	448
55%	0.67	473	0.82	493
60%	0.96	516	1.17	538
65%	1.41	559	1.75	583
70%	2.04	602	2.61	627
75%	3.54	644	4.83	672
80%	7.80	687	9.62	717
85%	15.95	730	19.81	762

Given that YE increases approved yield, it is difficult to build a case where taking YE places a farmer at a disadvantage unless it affects their eligibility for the trend adjusted yield endorsement, in which case the guarantee yield is lowered and becomes the APH yield.

Additional Information

RMA has a factsheet on YE released in December available [here](#). An overview of premium rating produced by RMA is available [here](#).

Appendix Table 1. Years in Which Yield Exclusion is Available for Non-irrigated Corn, Illinois.

County	Year				County	Year			
	1995	2002	2005	2012		1995	2002	2005	2012
Adams				Y	Kendall			Y	
Alexander				Y	LaSalle				Y
Bond				Y	Lawrence				Y
Brown				Y	Livingston				Y
Calhoun				Y	McLean				Y
Champaign				Y	Macon				Y
Christian				Y	Macoupin				Y
Clark				Y	Madison	Y			Y
Clay				Y	Marion				Y
Clinton				Y	Massac				Y
Coles				Y	Monroe	Y			Y
Cook			Y		Montgomery				Y
Crawford				Y	Morgan				Y
Cumberland				Y	Moultrie				Y
DuPage			Y		Perry		Y		Y
Edgar				Y	Pike			Y	Y
Edwards				Y	Pope		Y		Y
Effingham				Y	Pulaski				Y
Fayette				Y	Randolph	Y	Y		Y
Ford				Y	Richland				Y
Franklin		Y		Y	St. Clair	Y			Y
Gallatin		Y		Y	Saline		Y		Y
Greene				Y	Sangamon				Y
Grundy				Y	Schuyler				Y
Hamilton		Y		Y	Shelby				Y
Hancock				Y	Stephenson				Y
Hardin		Y		Y	Union				Y
Iroquois				Y	Vermilion				Y
Jackson		Y		Y	Wabash				Y
Jasper				Y	Washington		Y		Y
Jefferson		Y		Y	Wayne				Y
Jersey				Y	White				Y
Jo Daviess				Y	Will			Y	
Johnson		Y		Y	Williamson		Y		Y
Kane			Y		Winnebago				Y
Kankakee				Y	Woodford				Y

Y indicates years for which yield can be excluded.

A county not on this list has no years allowed for yield exclusions.

Appendix Table 2. Years in Which Yield Exclusion is Available for Non-irrigated Soybeans, Illinois.

County	Year			County	Year		
	1996	2003	2009		1996	2003	2009
Gallatin	Y						
Hardin	Y						
Jackson			Y				
Pope	Y						
Randolph			Y				
Saline	Y						
Stephenson		Y					
Union			Y				
Winnebago		Y					

Y indicates years for which yield can be excluded.

A county not on this list has no years allowed for yield exclusions.