



Hot, Dry Weather and Crop Insurance

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Recent hot, dry weather brings concerns about yield losses. Rains over the weekend alleviated concerns in many areas; however, there are some areas that are short on moisture. While it is too early to estimate 2011 yields with any degree of certainty, it is likely that crops have been under stress and yield losses may occur. In this post, yield protection offered by crop insurance is illustrated. Given current price levels that have harvest prices higher than those used to set crop insurance prices, farmers will need to have yield losses before crop insurance payments. Changes in market prices could change.

In the following three sections, crop insurance payments for corn are shown under the three plans in the COMBO product: Revenue Protection (RP), Revenue Protection with the Harvest Price Exclusion (RPwExcl), and Yield Protection (YP). Using history as a guide, more acres are insured with RP than with either RPwExcl or YP by a large margin.

The following sections show payments generated from the What-If" section of the Crop Insurance Decision Tool, a Microsoft Excel spreadsheet available for free download from the [FAST section](#) of *farmdoc*. A direct link to the tool is [here](#). Use of the spreadsheet allows generation of payments for different APH yields, coverage levels, and crop insurance products than those shown in the following sections.

Revenue Protection

RP is a farm-level revenue product that contains a provision causing the guarantee to increase if the harvest price is above the projected price. The guarantee increase provision likely will come into play as the December Chicago Mercantile Exchange (CME) corn contract currently is trading at \$6.80 per bushel, well above the \$6.01 projected price. When the harvest price is above the projected price, RP makes a payment when actual yield is below the Actual Protection History (APH) yield times the coverage level. Take, for example, an APH yield of 180 bushels. When harvest price is above projected price, payments will occur when yields are below:

153 bushels for an 85 percent coverage level (180 bushels x .85),
 144 bushels for an 80 percent coverage level (180 bushels x .80),
 135 bushels for a 75 percent coverage level (180 bushels x .75), and
 126 bushels for a 70 percent coverage level (180 bushels x .70).

Figure 1 shows RP insurance payments for different yields and harvest prices. As can be seen in Figure 1, insurance payments occur at harvest prices above the \$6.01 projected price for yields below 135 bushels. These yields are below the APH yield times the coverage level (144 bushels = 180 bushels x 80 percent coverage level).

Figure 1. Insurance Payments for Revenue Protection (RP) Given an 180 Bushel APH Yield and 80 Percent Coverage Level.

Policy	Rev Prot		Yield Increment (bu.)	10	Price Increment (\$/bu.)	0.2								
Coverage Level	80%		Protection level	100%	(for GRP, GRIP, and GRIP-HR)									
Harvest	Harvest Price													
Yield	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20	7.40
80	481	465	449	433	417	401	385	397	410	422	435	448	461	474
90	433	415	397	379	361	343	325	335	346	356	367	378	389	400
100	385	365	345	325	305	285	265	273	282	290	299	308	317	326
110	337	315	293	271	249	227	205	211	218	224	231	238	245	252
120	289	265	241	217	193	169	145	149	154	158	163	168	173	178
130	241	215	189	163	137	111	85	87	90	92	95	98	101	104
140	193	165	137	109	81	53	25	25	26	26	27	28	29	30
150	145	115	85	55	25									
160	97	65	33	1										
170	49	15												
180	1													
190														
200														
210														
220														

Developed from "What-If" section of *Crop Insurance Decision Tool*, a Microsoft Excel Spreadsheet available for download from the FAST section of *farmdoc*.

Revenue Protection with Exclusion

Unlike RP, RPwExcl does not have the guarantee increase. As a result, RPwExcl's payments will be less than RP's payments when the harvest price is above the projected price (see Figure 2). At a \$6.80 harvest price and a 120 bushel yield, RPwExcl makes a \$49 per acre payment compared to \$163 per acre payment under RP.

Figure 2. Insurance Payments for Revenue Protection with Harvest Price Exclusion (RPwExcl) Given an 180 Bushel APH Yield and 80 Percent Coverage Level.

Policy	Rev Prot (with Exc)				Yield Increment (bu.)	10				Price Increment (\$/bu.)	0.2			
Coverage Level	80%				Protection level	100%				(for GRP, GRIP, and GRIP-HR)				
Harvest	Harvest Price													
Yield	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20	7.40
80	481	465	449	433	417	401	385	369	353	337	321	305	289	273
90	433	415	397	379	361	343	325	307	289	271	253	235	217	199
100	385	365	345	325	305	285	265	245	225	205	185	165	145	125
110	337	315	293	271	249	227	205	183	161	139	117	95	73	51
120	289	265	241	217	193	169	145	121	97	73	49	25	1	
130	241	215	189	163	137	111	85	59	33	7				
140	193	165	137	109	81	53	25							
150	145	115	85	55	25									
160	97	65	33	1										
170	49	15												
180	1													
190														
200														
210														
220														

Developed from "What-If" section of *Crop Insurance Decision Tool*, a Microsoft Excel Spreadsheet available for download from the FAST section of *farmdoc*.

Yield Protection

YP will make payments when yields are below a yield guarantee. For our 180 bushel APH example, payments will occur at yields below:

- 153 bushels for an 85 percent coverage level (180 bushels x .85),
- 144 bushels for an 80 percent coverage level (180 bushels x .80),
- 135 bushels for a 75 percent coverage level (180 bushels x .75), and
- 126 bushels for a 70 percent coverage level (180 bushels x .70).

Figure 3 shows insurance payments. Note that they do not change with harvest price. YP makes payments on yield losses at \$6.01, the projected price for 2011. At harvest prices above the projected price, YP will make higher payments than RPwExcl, but lower payments than RP.

Figure 3. Insurance Payments for Yield Protection (YP) Given an 180 Bushel APH Yield and 80 Percent Coverage Level.

Policy	Yield Prot				Yield Increment (bu.)	10				Price Increment (\$/bu.)	0.2			
Coverage Level	80%				Protection level	100%				(for GRP, GRIP, and GRIP-HR)				
Harvest	Harvest Price													
Yield	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20	7.40
80	385	385	385	385	385	385	385	385	385	385	385	385	385	385
90	325	325	325	325	325	325	325	325	325	325	325	325	325	325
100	264	264	264	264	264	264	264	264	264	264	264	264	264	264
110	204	204	204	204	204	204	204	204	204	204	204	204	204	204
120	144	144	144	144	144	144	144	144	144	144	144	144	144	144
130	84	84	84	84	84	84	84	84	84	84	84	84	84	84
140	24	24	24	24	24	24	24	24	24	24	24	24	24	24
150														
160														
170														
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Developed from "What-If" section of *Crop Insurance Decision Tool*, a Microsoft Excel Spreadsheet available for download from the FAST section of *farmdoc*.

Summary

Crop insurance will provide protection against yield losses. At harvest prices above projected prices, RP will make higher payment than YP which will make higher payments than RPwExcl, given the same yield and coverage level. Most policies sold under the COMBO product likely are RP.

Whether yield losses will cause widespread insurance payments is an open question. Weather over the next several weeks will determine yields, which will go a long way to determining crop insurance payments.