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Insurance Payment Estimates for 2005

Rains during middle July have reduced dry and droughty conditions over some areas of Illinois. Other areas, however, received little or no rain and crop yields likely are still being reduced. Even areas that received significant rains have had yield reductions due to little rain during May and June.

Low yields may result in crop insurance payments on some farms in Illinois. An insurance payment calculator has been developed and is available under the *2005 iFarm Insurance Payment Calculator* link in the crop insurance section of *farmdoc* (www.farmdoc.uiuc.edu/cropins). A user of this program enters the crop, county, and Actual Production History (APH) yield for the situation of interest. Then, insurance payments are generated for user-specified yields and harvest prices.

Table 1 shows an example output for a Lee county farm growing corn in 2005. These payments are based on a 158 bu. Actual Production History (APH) yield. Insurance payments are calculated given a 100 bu. corn yield for both the farm and county.

Table 1. Per Acre Insurance Payments for Lee County, Illinois Farm Given a 100 bu. Farm and County Yield and a \$2.50 Harvest Price.¹

Coverage Level	Insurance Product						
	APH	RA-BP	RA-HP	CRC	GRP	GRIP-NoHR	GRIP-HR
50%	0			0			
55%	0			0			
60%	0			0			
65%	6	0	7	7			
70%	23	7	27	27	55	30	58
75%	41	25	46	46	88	65	93
80%	58	43	66	66	118	97	125
85%	75	62	86	86	144	124	150
90%					167	149	179

¹ Insurance payments for a farm with a 158 bu. APH yield and 2005 insurance prices (\$2.20 APH price, \$2.32 base price, and \$2.38 expected price). Group products' payments are calculated at a 100% protection level.

² Insurance products names are Actual Production History (APH), Revenue Assurance -- Base Price (RA-BP), Revenue Assurance -- Harvest Price option (RA-HP), Crop Revenue Coverage (CRC), Group Risk Plan (GRP), Group Risk Income Plan -- no Harvest Revenue option (GRIP-NoHR), and Group Risk Income Plan -- Harvest Revenue option (GRIP-HR).

2005 Payments

This year is a fairly typical drought year, except that the drought is not as wide spread as in some years. In drought years, yields are lower because of dry weather and harvest prices often are higher than base prices. Base and harvest prices are used to determine insurance payments and are averages of settlement prices of Chicago Board of Trade futures contracts (December contract for corn and November contract for soybeans). The base price is determined by averaging settlement prices during February while harvest prices are based on averages during a harvest month (November for corn having Revenue Assurance (RA), October for corn having Crop Revenue Coverage (CRC), and October for soybeans). Generally during short crop years, futures prices are higher in the fall than in February. Hence, one would expect harvest prices to be higher than base prices this year.

The base price for corn is \$2.32 in 2005. Currently, the December corn contract is trading around \$2.50. If the December contract continues to trade higher than \$2.32 during the fall price determination period, the harvest price will be higher than the base price. Similarly, the soybean base price is \$5.53 per bu. and the November contract is trading in the \$6.70 to \$6.80 range. The harvest price for soybeans likely will be higher than the base price.

Having higher harvest prices than base prices can cause some revenue products to have higher insurance payments than other revenue products. Revenue products with guarantee increases will have higher payments than those products without guarantee increases. For farm-level products, this means Revenue Assurance with the harvest price option (RA-HR) and Crop Revenue Coverage (CRC) will have higher payments than RA with the base price option (RA-BP). For county level products, the Group Risk Income Plan with the harvest revenue option (GRIP-HR) will have higher payments than GRIP without the harvest revenue option (GRIP-NoHR). These relationships are illustrated in Table 1.

This year, supply shortfalls will not be as large as in some years in which droughts were more widespread. Hence, harvest prices may not be above base prices as much as in some years. In 1988, for example, the harvest price was \$.52 higher than the base price for corn. For a similar increase to happen in 2005, the harvest price would have to be \$2.84. At this point, a harvest price of \$2.84 or above seems unlikely. Similarly, the soybean harvest price was \$1.50 higher than the base price. This type of increase in 2005 would mean that the harvest price for soybeans would be \$7.03.

Estimated Yields

Both harvest prices and yields are not known because we are only partially through the growing season. Indication of harvest prices can be obtained from futures prices. To provide some perspective on yields, Table 2 shows corn yields as a percent of trend-line county yields for some of the worst yielding years in Illinois. Trend-line yields represent a projection of county yield. Roughly half the time, yields will be above the trend-line yield and half the time yields will be below the trend-line yield.

In 1988, Lee County's county yield was 52% of its trend line yield (see Table 2). For Lee County, the trend-line yield in 1988 was 129 bu. per acre while actual yield in 1988 was 67 bu. The 52% percent of trend-line yields equals (67 actual yield /129 trend-line yield).

These percents can be used to estimate 2005 yields. For example, 1988 yield conditions can be estimated by multiply the 1988 percent shortfall by 2005 trend-line yield. The trend-line yield for Lee county in 2005 is 158.4 (see Table 3). If 1988 conditions happen in 2005, Lee County's yield will be 82 bu. per acre (52% x 158.4). Using percentages in Table 3 for alternative years, one can gain a perspective of more severe shortfalls that have occurred in the past.

Trend-line yields in 2005 for Illinois counties are reported in Table 3. These yields also are used to set expected yields for the Group products. The *iFARM Payment Calculator* reports expected yields by crop

and county.

A similar process to that illustrated above for corn can be used for soybeans. Table 4 shows the percent of trend-line county yields for some of the worst overall yield years for soybeans in Illinois.

Use of county yields may not represent an individual farm yield. Farm yields are more variable than county yields. Hence, percents in Tables 2 and 4 may be higher or lower than that experienced on an individual farm.

Summary

Crop insurance payments could be large on some farms and will partially make up for shortfalls in income. As yield and price estimates become more certain, the *iFARM Insurance Payment Calculator* on *farmdoc* can be used to estimate payments.

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Table 2. Corn Yield as a Percent of Trend-line County Corn Yield, Illinois.

County	Year				County	Year			
	1988	1991	1995	2002		1988	1991	1995	2002
	Percent					Percent			
Adams	65	92	84	97	Lee	52	88	87	106
Alexander	78	69	99	68	Livingston	34	54	83	95
Bond	55	89	80	75	Logan	51	101	78	94
Boone	54	65	77	93	McDonough	64	101	79	102
Brown	67	91	77	91	McHenry	56	65	90	75
Bureau	51	93	87	104	McLean	46	83	81	91
Calhoun	88	101	91	74	Macon	57	94	85	79
Carroll	43	93	84	111	Macoupin	70	102	85	92
Cass	65	101	80	94	Madison	64	95	82	91
Champaign	63	63	71	93	Marion	77	79	87	76
Christian	64	95	83	85	Marshall	49	79	82	95
Clark	81	85	97	82	Mason	57	94	82	93
Clay	66	64	88	60	Massac	83	83	87	61
Clinton	71	99	91	83	Menard	49	108	77	96
Coles	65	85	86	84	Mercer	51	90	87	115
Cook	54	53	82	76	Monroe	70	94	77	58
Crawford	72	78	90	78	Montgomery	63	97	82	84
Cumberland	76	84	95	90	Morgan	66	104	84	97
DeKalb	71	85	87	92	Moultrie	61	84	85	83
De Witt	62	91	79	84	Ogle	52	85	85	98
Douglas	67	76	83	90	Peoria	49	93	80	102
Dupage	87	73	84	69	Perry	89	80	84	57
Edgar	76	91	85	90	Piatt	67	88	74	79
Edwards	82	73	84	67	Pike	74	95	89	84
Effingham	67	87	96	77	Pope	83	73	77	71
Fayette	65	83	87	66	Pulaski	89	78	86	70
Ford	35	53	75	103	Putnam	55	76	85	91
Franklin	105	79	69	49	Randolph	79	95	73	58
Fulton	51	95	78	104	Richland	75	52	84	76
Gallatin	93	80	77	66	Rock Island	55	79	87	115
Greene	78	105	86	82	St Clair	84	105	74	72
Grundy	42	52	84	88	Saline	103	63	72	53
Hamilton	90	73	82	58	Sangamon	61	101	83	91
Hancock	53	94	83	103	Schuyler	66	101	80	93
Hardin	68	70	87	82	Scott	66	105	84	88
Henderson	60	95	81	108	Shelby	64	88	85	78
Henry	50	88	89	111	Stark	56	96	84	103
Iroquois	49	52	73	105	Stephenson	56	86	84	98
Jackson	87	74	79	62	Tazewell	51	98	78	94
Jasper	71	59	90	77	Union	91	67	87	68
Jefferson	86	66	71	69	Vermilion	64	61	74	102
Jersey	77	98	89	76	Wabash	71	76	87	71
Jo Daviess	43	90	89	107	Warren	50	100	81	109
Johnson	73	56	70	74	Washington	78	90	80	61
Kane	81	76	89	84	Wayne	76	64	75	66
Kankakee	39	51	84	92	White	95	84	81	60
Kendall	70	52	78	79	Whiteside	43	79	88	103
Knox	48	94	80	107	Will	45	45	73	84
Lake	51	66	87	78	Williamson	98	68	69	47
La Salle	60	69	82	91	Winnebago	45	79	93	89
Lawrence	75	67	79	77	Woodford	40	79	84	99

Table 3. Expected County Yields for Illinois, 2005.

County	Corn	Soybean	County	Corn	Soybean
Adams	154.8	44.6	Lee	158.4	48.1
Alexander	NA	33.7	Livingston	146.7	43.5
Bond	125.4	35.0	Logan	165.2	49.3
Boone	142.1	43.9	McDonough	162.2	49.6
Brown	148.0	45.4	McHenry	136.9	38.9
Bureau	158.6	47.9	McLean	159.1	48.6
Calhoun	133.4	41.2	Macon	170.4	49.2
Carroll	161.9	54.2	Macoupin	155.8	44.8
Cass	161.4	45.8	Madison	144.3	40.0
Champaign	153.2	48.4	Marion	115.3	34.7
Christian	167.3	48.8	Marshall	154.4	46.3
Clark	145.4	41.7	Mason	150.7	43.7
Clay	112.6	35.3	Massac	109.3	33.9
Clinton	121.7	38.0	Menard	166.0	47.5
Coles	159.0	46.7	Mercer	150.1	49.3
Cook	NA	NA	Monroe	123.9	35.8
Crawford	128.9	40.0	Montgomery	152.9	42.5
Cumberland	141.1	41.0	Morgan	164.6	49.3
DeKalb	157.6	48.9	Moultrie	160.3	47.0
De Witt	160.3	49.0	Ogle	155.2	47.2
Douglas	149.8	48.1	Peoria	162.3	49.2
Dupage	NA	NA	Perry	93.6	30.3
Edgar	154.1	46.6	Piatt	163.7	50.9
Edwards	120.5	37.9	Pike	156.2	43.2
Effingham	128.4	39.1	Pope	NA	NA
Fayette	127.0	36.7	Pulaski	NA	35.4
Ford	150.9	44.5	Putnam	161.8	48.4
Franklin	98.3	32.7	Randolph	104.8	31.9
Fulton	154.6	46.1	Richland	111.8	37.3
Gallatin	134.8	38.3	Rock Island	156.7	49.0
Greene	153.3	45.7	St Clair	136.1	37.3
Grundy	148.6	43.5	Saline	112.5	37.2
Hamilton	113.9	35.7	Sangamon	170.1	49.7
Hancock	149.5	46.1	Schuyler	159.1	45.6
Hardin	NA	NA	Scott	154.7	44.5
Henderson	152.9	49.2	Shelby	143.9	41.7
Henry	152.8	48.4	Stark	164.4	50.9
Iroquois	148.5	45.3	Stephenson	145.4	47.6
Jackson	113.3	34.2	Tazewell	160.6	50.6
Jasper	128.3	40.6	Union	NA	35.4
Jefferson	100.9	33.4	Vermilion	147.3	46.0
Jersey	149.6	44.1	Wabash	128.3	38.9
Jo Daviess	142.8	51.3	Warren	159.6	51.9
Johnson	NA	37.0	Washington	113.4	33.1
Kane	153.3	43.4	Wayne	114.1	34.8
Kankakee	139.8	42.0	White	131.7	36.1
Kendall	145.0	45.1	Whiteside	151.3	48.6
Knox	158.8	50.4	Will	138.2	42.3
Lake	103.2	29.5	Williamson	102.8	32.5
La Salle	151.5	44.2	Winnebago	135.2	40.2
Lawrence	124.7	40.6	Woodford	165.5	49.6

Source: U.S. Department of Agriculture, Risk Management Agency.

Table 4. Soybean Yield as a Percent of Trend-line County Soybean Yield, Illinois.

County	Year				County	Year			
	1974	1983	1988	2003		1974	1983	1988	2003
	Percent					Percent			
Adams	82	68	74	97	Lee	74	104	67	63
Alexander	83	76	87	107	Livingston	73	90	43	70
Bond	79	51	70	85	Logan	69	87	66	81
Boone	61	102	64	61	McDonough	74	82	81	88
Brown	80	59	79	90	McHenry	68	104	70	70
Bureau	74	103	67	76	McLean	72	92	59	72
Calhoun	86	81	85	91	Macon	65	80	70	87
Carroll	74	94	72	65	Macoupin	85	59	75	94
Cass	69	71	75	95	Madison	92	69	76	90
Champaign	74	95	68	78	Marion	80	48	82	76
Christian	72	77	73	93	Marshall	65	93	62	72
Clark	71	69	72	95	Mason	71	73	61	93
Clay	81	48	70	96	Massac	85	55	100	124
Clinton	87	59	80	86	Menard	64	78	65	91
Coles	75	72	68	97	Mercer	77	98	80	71
Cook	67	96	82	84	Monroe	84	83	68	92
Crawford	76	65	74	97	Montgomery	79	67	68	91
Cumberland	72	67	72	100	Morgan	84	72	75	95
DeKalb	74	98	88	72	Moultrie	72	90	67	94
De Witt	72	86	70	80	Ogle	65	96	71	57
Douglas	73	80	73	87	Peoria	58	88	74	78
Dupage	70	93	94	85	Perry	72	58	87	86
Edgar	73	89	77	89	Piatt	70	88	71	80
Edwards	78	67	80	85	Pike	82	72	86	96
Effingham	80	47	65	98	Pope	88	60	76	109
Fayette	81	49	68	85	Pulaski	82	68	92	101
Ford	73	91	47	69	Putnam	84	99	66	73
Franklin	79	51	91	84	Randolph	78	61	74	86
Fulton	59	74	73	87	Richland	83	57	70	99
Gallatin	88	76	91	100	Rock Island	71	101	78	74
Greene	86	64	74	95	St Clair	90	80	80	92
Grundy	76	97	61	82	Saline	91	69	96	102
Hamilton	81	49	85	72	Sangamon	71	80	71	94
Hancock	75	80	69	91	Schuyler	60	67	77	93
Hardin	95	82	78	114	Scott	80	66	77	101
Henderson	83	85	78	75	Shelby	70	78	73	97
Henry	64	92	70	68	Stark	71	91	79	68
Iroquois	80	99	54	66	Stephenson	66	96	77	54
Jackson	74	71	84	100	Tazewell	60	87	62	76
Jasper	72	56	75	97	Union	80	63	91	100
Jefferson	87	53	82	71	Vermilion	76	99	65	80
Jersey	97	65	77	87	Wabash	81	79	77	85
Jo Daviess	76	103	69	51	Warren	88	85	80	81
Johnson	83	62	94	119	Washington	89	60	73	96
Kane	69	98	88	79	Wayne	79	63	70	76
Kankakee	78	105	46	77	White	85	72	85	88
Kendall	82	100	84	79	Whiteside	66	101	60	72
Knox	70	92	78	75	Will	68	97	65	84
Lake	60	107	81	73	Williamson	81	58	93	103
La Salle	82	101	65	74	Winnebago	55	99	59	59
Lawrence	84	74	79	101	Woodford	68	94	56	71