

Actual Production History — Crop Insurance

Department of Agricultural Economics — www.agmanager.info



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The goal of the Crop Insurance Act of 1980 was to make crop insurance available to growers of major crops as a replacement for the USDA's low-yield disaster program. Crop insurance is marketed by local private crop insurance agents who, in most cases, sell crop insurance along with other lines of insurance.

Growers also may select catastrophic (CAT) coverage at the 50 percent level with 55 percent of the market price. The coverage is "free" but will require the grower to pay a \$300 processing fee. Growers who purchase coverage above CAT receive a higher dollar subsidy. Growers also pay a \$30 administrative fee.

The focus of this worksheet is to provide a method for farmers to evaluate APH (MPCI) and catastrophic coverage. This worksheet does not cover private hail/fire crop insurance.

APH insurable losses include: Drought, excessive moisture, hail, wind, frost/freeze, tornado, lightning, flood, insect infestation, plant disease, excessive temperature during pollination, wildlife damage, fire, and earthquakes.

APH does not cover losses resulting from poor farming practices, low commodity prices, theft, fire caused by non-weather events, and specified perils, which are excluded in a limited number of policies.

Crops insurable: The crops that are insurable (may vary by county) include cotton, barley, soybeans, corn, grain sorghum, and wheat. Other crops are covered only in selected counties.

Premium rates: *Premium percentage rates decline as the grower's insurance yield increases.* A grower with a top yield average for the county typically pays a premium rate of about one-third of the premium rate paid by a grower with a yield history well below county average. The premium rates also change to reflect the difference in crop production risk across the state of Kansas.

Coverage: Coverage is set at 50, 55, 60, 65, 70, 75, 80, or 85 percent of the individual grower's yield history. If the grower has less than four years of records, then adjusted NASS

yields are used for the missing years' records (this approach ended using county average yields to set the coverage for individuals).

Price election: Farmers may select any price election within a minimum and maximum price range set by RMA.

Table 1. *Example: Premium for Central Kansas (2010)*

	Example	Your Farm
Average Yield for Insurance	40 bu	_____
× Coverage Level (50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%)	70%	_____
= Bushels per Acre Yield Guarantee	28 bu	_____
× Wheat Price Election (\$3.12, up to \$5.20)	\$ 5.20	_____
= Liability	\$ 145.60	_____
× Rate	4.42%	_____
= Dollar Premium per Acre	\$ 6.44	_____

Table 2. *Example: Indemnity Payment for Central Kansas (2010)*

	Example	Your Farm
Average Yield for Insurance	40 bu	_____
× Coverage Level (50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%)	70%	_____
= Bushels per Acre Yield Guarantee	28 bu	_____
– Less Current Year's Crop Production (bu)	10 bu	_____
= Bushel Loss per Acre	18 bu	_____
× Price Election (\$4.41, up to \$7.35)	\$ 5.20	_____
= Indemnity Payment per Acre	\$ 93.60	_____
– Less Premium	\$ 6.44	_____
= Net Indemnity Payment per Acre	\$ 87.16	_____

APH Worksheet **Analysis of Per Acre Net Cash Flow**

Crop: _____

Situation: _____

	Disaster Year Central Kansas		Typical Year Central Kansas		Disaster Year Central Kansas	
	With Insurance	Without Insurance	With Insurance	Without Insurance	With Insurance	Without Insurance
Projected Crop Sales and Other Cash Inflows						
1. Enter Yield per Planted Acre	10.0	10.0				
2. Expected Market Price + LDP	\$4.00	\$4.00				
3. Expected Sales: (Line 1 × Line 2)	\$40.00	\$40.00				
4. Counter Cyclical or ACRE Payment	\$0.00	\$0.00				
5. Enter Other Receipts (Direct Payment, ¹ straw, etc.)	\$18.53	\$18.53				
6. Total Receipts: (Line 3 + Line 4 + line 5)	\$58.53	\$58.53				
MPCI-APH Premium						
7. Actual Production History (10 year average farm yield)	40.0					
8. Coverage Level (50% 55% 65% 70% 75% 80% 85%)	70%					
9. Enter Price Election ²	\$5.20					
10. Liability: Line 7 × Line 8 × Line 9	\$145.60					
11. Enter Premium Rate for the Desired Level of Coverage ³	4.42%					
12. Insurance Premium: Line 10 × Line 11	\$6.44					
Projected Crop Cash Requirements						
13. Enter Preharvest Cash Operating Expense ⁴	\$119.46	\$119.46				
14. Enter Harvest Cash Expense per Acre	\$19.28	\$19.28				
15. Enter Expenses/Bushel (\$0.26 × Line 1) ⁵	\$2.60	\$2.60				
16. Debt Service, Family Living Expense, and Other Fixed Cash Requirements ⁶	\$56.61	\$56.61				
17. Total Cash Requirements: (Sum Line 13 to Line 16)	\$197.95	\$197.95				
Projected MPCI-APH Payment Received						
18. Bushel Guarantee (Line 7 × Line 8)	28.0					
19. Bushel Guarantee - Production (Line 18 - Line 1, enter zero if answer is a negative number)	18.0					
20. Insurance Payment Received (Line 19 × Line 9)	\$93.60					
21. Net Insurance Payment (Line 20 - Line 12)	\$87.16					
22. Net Cash Flow: (Line 6 - Line 17 + Line 21) ⁷	-\$52.26	-\$139.42				

¹Direct payment is not subject to price or yield risk but the counter cyclical payment is subject to price risk.²Price elections and revenue prices are available from local insurance agents.³Premium rates for a specific farm and proven yield can be obtained from insurance agents.⁴Obtain crop expense estimates from your records or KSU Farm Management Association Summary. Use only cash expenses because this is a cash flow analysis.⁵With a low yield, cash expenses of some harvest costs, such as trucking and storage, decline.⁶Debt load, off farm income and/or livestock enterprises will affect cash requirements. Assumes \$53,620 for family living cost and 1,600 acres of crop land (Source: KSU Farm Management Association Summary).⁷Net cash flow was used for the analysis because normally a farm will not be profitable when a crop disaster occurs. The farmer's short-term strategy is to cover cash flow requirements.Publications from Kansas State University are available on the World Wide Web at: www.ksre.ksu.eduContents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit G.A. (Art) Barnaby, Jr., *Actual Production History — Crop Insurance*, Kansas State University, November 2009.**Kansas State University Agricultural Experiment Station and Cooperative Extension Service**

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