

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, 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 (2007)

	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 (\$4.41, up to \$7.35)	\$ 7.35	_____
= Liability	\$ 205.80	_____
× Rate	4.27%	_____
= Dollar Premium per Acre	\$ 8.79	_____

Table 2. Example: Indemnity Payment for Central Kansas (2007)

	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)	\$ 7.35	_____
= Indemnity Payment per Acre	\$ 132.30	_____
– Less Premium	\$ 8.79	_____
= Net Indemnity Payment per Acre	\$ 123.51	_____

MPCI-APH Worksheet
Analysis of Per Acre Net Cash Flow

Crop: _____

Situation: _____

	Disaster Year Central Kansas With Insurance		Typical Year Central Kansas With Insurance		Disaster Year Central Kansas Without Insurance	
	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	\$7.35	\$7.35	_____	_____	_____	_____
3. Expected Sales: (Line 1 × Line 2)	\$73.50	\$73.50	_____	_____	_____	_____
4. Counter Cyclical Payment	\$0.00	\$0.00	_____	_____	_____	_____
5. Enter Other Receipts (Direct Payment, ¹ straw, etc.)	\$14.14	\$14.14	_____	_____	_____	_____
6. Total Receipts: (Line 3 + Line 4 + line 5)	\$87.64	\$87.64	_____	_____	_____	_____
MPCI-APH Premium						
7. Average Yield for Insurance (APH)	40.0	_____	_____	_____	_____	_____
8. Coverage Level (50% 55% 65% 70% 75% 80% 85%)	70%	_____	_____	_____	_____	_____
9. Enter Price Election ²	\$7.35	_____	_____	_____	_____	_____
10. Liability: Line 7 × Line 8 × Line 9	\$205.80	_____	_____	_____	_____	_____
11. Enter Premium Rate for the Desired Level of Coverage ³	4.27%	_____	_____	_____	_____	_____
12. Insurance Premium: Line 10 × Line 11	\$8.79	_____	_____	_____	_____	_____
Projected Crop Cash Requirements						
13. Enter Preharvest Cash Operating Expense ⁴	\$95.29	\$95.29	_____	_____	_____	_____
14. Enter Harvest Cash Expense per Acre	\$16.12	\$16.12	_____	_____	_____	_____
15. Enter Expenses/Bushel (\$0.15 × Yield) ⁵	\$1.50	\$1.50	_____	_____	_____	_____
16. Debt Service, Family Living Expense, and Other Fixed Cash Requirements ⁶	\$48.58	\$48.58	_____	_____	_____	_____
17. Total Cash Requirements: (Sum Line 14 to Line 18) Line 13 + Line 14 + Line 15 + Line 16	\$161.49	\$161.49	_____	_____	_____	_____
Projected MPCI-APH Payment Received						
18. Enter Line 7 × Line 8 (bu.)	28.0	_____	_____	_____	_____	_____
19. Enter Line 18 - Line 1 (enter zero if answer is a negative number)	18.0	_____	_____	_____	_____	_____
20. Insurance Payment Received: (Line 19 × Line 9)	\$132.30	_____	_____	_____	_____	_____
26. Net Cash Flow: (Line 5 - Line 12 - Line 19 + Line 25) ⁷	\$49.66	-\$73.85	_____	_____	_____	_____

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 \$53,329 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.

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