OSU Current Report

Cooperative Extension Service ● Division of Agriculture ● Oklahoma State University

Multi-Peril Crop Insurance

by

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Multi-Peril Crop Insurance is a federally supported program to cover uncontrollable hazards which reduce yields below the insured level. Some of the causes of these losses are drouth, flood, insect damage and frost. Rates reflect the level of risk on the crop in the area in which the farm is located and on historical yields on the insured farm. Rates are also affected by the level of yeild selected by the insurance buyer, 50%, 65%, or 75% of the APH (Actual Production History).

Federal Crop Insurance is sold through private companies only and is not available through ASCS offices. Lists of agents who are qualified to sell the insurance are available in County ASCS offices. Farmers need to decide whether or not they should purchase Multi-Peril Crop Insurance for wheat and other fall seeded crops in time to complete the application process by August 15th. April 15th is the final date for spring seeded crops. While Federal Crop Insurance is an established program, it has been changed substantially from earlier forms when yields covered were based on area averages rather than on the production history of each farm unit.

Congress and the administration have replaced the disaster payments of farm programs prior to 1983 with the insurance concept. The new plan is for assistance in the payment of insurance premiums. But the bottom line for farmers is that they will partially pay for "disaster" coverage through insurance premiums.

FEATURES OF FEDERAL CROP INSURANCE

- Administered by Federal Crop Insurance Corporation.
- Multiple Peril. Drouth, Disease, Fire, Flood, Hail, In-
  sects, Wind, etc.
- Sold by agents of Private Insurance Companies.
- Premiums partially paid by FCIC.
- Coverage available for nearly all crops.
- Various levels of coverage.
- Premiums Based on Coverage Selected. (Yield & Price).
- Yields covered are dependent on Actual Production History.
- Three yield levels available. (50%, 65%, and 75% of historical yield.
- Three price levels available.

Price elections available for Oklahoma crops are shown in Table I on page 2.

Table I. Price Options For Federal Crop Insurance

Crop	Unit.	$Low	$Med	$High
Barley	Bu.	2.00	2.25	2.60
Corn	Bu.	2.00	2.40	2.90
Corn Silage	Ton	14.00	16.00	19.00
Cotton	Lb.	.45	.50	.60
(East of I-35)	Lb.	.45	.55	.65
GR.Sorghum	Bu.	2.00	2.40	2.75
Peanuts	Lb.	.13	.22	.28
(Non-Quota)	Lb.	.11	.13	.13
Soybeans	Bu.	4.50	5.25	6.50
Wheat	Bu.	2.50	3.50	4.00

- Premiums adjusted for insured's loss history, as much as 50% after several years experience.
- Reduced premium option available when hail and fire insurance is purchased separately.
- Operator or owner may insure interest in the crop independent of the other.

ACTUAL PRODUCTION HISTORY (APH)

Actual Production History was introduced to provide increased coverage to farmers who could provide proof of yields higher than the averages for their area, without a change in premiums. The APH is required for cotton, feed grains and rice in 1985 and will be used for the 1986 wheat crop and others in later years, so it becomes very important for producers to keep good records on yields, by field, for 1983, and following years.

The APH is primarily a ten-year average yield, but provisions have been made to calculate the APH from fewer years of data by indexing from county yields by the percentage difference between the farm yield and the county transitional yield. The transitional yields are provided by the crop insurance actuarial operations office to each county ASCS office for the purpose of computing substitute production histories for years where individual farm yields are not available.

Suppose Karl Kareful Farmer had proven yields for three years:

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1981      35 bu./A.
1982      47 bu.
1983      26
          108/3=36 bu.  Average and the 3-year average for his area
                        is 30 bu./A. and the 10 year average is 28 bu.
36/30=1.2 (Karl's yield is 20% above the Co. Average.)
28*1.2=33.6 bu. = Karl's APH.
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If Karl insured at the 65% level, he would begin to collect indemnity if his yield fell below .65 * 33.6 = 21.84 bu./A.
If he chose the $4 bu price and his crop made only 10 bu./A. he would collect: (21.84-10)= 11.84 * $4 = $47.36/A.

WHAT RECORDS ARE NECESSARY?

The County ASC is required to verify yield records. If loans were taken on all of the production, they suffice. If proven yields have been established for farm program purposes, they will be utilized. Sales receipts for grain are probably the best evidence. If part of the grain were fed, field records, fertilizer usage, and records on the number and type of livestock fed are considered. Any written information which constitutes evidence of production will be useful.

A recommended field record would contain:

1. Approximate legal description.
2. Tillage practices used.
3. Date planted and variety.
4. Fertilizer and chemicals used.
5. Date and quantity harvested.
6. Dates, buyers, amounts sold.
7. Lease crop shares (if any).

Actual Production History for insurance purposes is calculated for a ten year period using as much actual farm data as is available.

PREMIUM RATES

Premium Rates are established for each County based on the yield history data available for the county. They vary according to the historical frequency and severity of crop losses experienced in that particular area.

The amount of coverage provided for that premium rate is set for each Farming Unit through the APH determined for that Unit. (A separate Unit is set up for each tract or combination of tracts which are operated under the same ownership-leasing arrangement. Units presently constituted for Farm Program purposes are often used.

The premium for an insurance contract is computed according to the following example. Assumptions in the example are that the farm has a proven yield of 30 bu./Acre, the operator has chosen Level II (65%) coverage and the middle price option ($3.50/bu.). It is also assumed that the rate for the area in which the land is located is 6.5% and that 90 acres are being insured.

Premium Computation Illustration.

1. Actual Production History (APH) for the Farm Unit.	30.00 bu.
2. Percent level of Coverage chosen. (50,65,or 75).	x .65 %
3. Equals Bushel/Acre Guarantee.	= 19.50 bu.
4. Times Price Election chosen (Wheat=2.50,$3.50 & $4)	x 3.50 Dollars
5. Equals Dollar Guarantee per acre.	= 68.25 $/Acre
6. Times Premium Rate (From Ins. Agent Ratebook)	x .065 Rate
7. Equals Premium per Acre.	= 4.44
8. Times previous loss Experience Factor	x 1.0
9. Equals Adjusted Rate per Acre.	= 4.44
10.Times Acres Insured.	x90.0 Acres.
11.Equals Total Premium.	=399.60
12.Times Producer's Share of Crop.	x .67 (2/3rds)
13.Equals Producer's Share of Premium.	=266.40 Premium

Loss Indemnity Computation.

Assuming that this insured crop is damaged and produces only 13.5 bu. per acre. The insurance proceeds would then be computed as follows.

1. Bushels per Acre Guarantee on the contract.	19.5 bu./Acre
2. Less Actual Yield Harvested.	−13.5 bu./Acre
3. Equals Insured Bushels Not Harvested.	= 6.0 bu./Acre
4. Times Price Level Insured.	x 3.5 $/Acre
5. Equals Indemnity per Acre	=21.00 $/Acre
6. Times Acres insured.	x90.0 Acres
7. Equall Total Indemnity.	=1,890.00 Dollars
8. Times Insured's share.	x .67 Percent
9. Equals Insured's share of Indemnity.	=1,260.00 Dollars

The landowner or the operator, (anyone who has an 'insurable interest' in the crop) may insure whether the other parties insure or not.

STEPS TO OBTAIN CROP INSURANCE

1 Analyze risk exposure to decide on need for Multi-Peril Insurance.
2 Take organized record data to the county ASCS office to set up the Actual Production History for each Farm Unit to be insured.
3 Contact an authorized FCIC agent. (County ASCS mmintains a list of the agents who have asked to be place on the county list).
4 Select desired yield and price coverage.
5 Sign application form before the application date. (April 15th for spring-planted crops, August 15th for fall planted crops.

WHO SHOULD BUY CROP INSURANCE?

Risk-taking is a part of life for everyone and certainly part of business. One of the main reasons for going into business is the presence of risk, which is defined either as "exposure to peril or loss" or "chance-taking for gain or loss". In either case, all insurance is for the purpose of providing the individual an opportunity to pay a relatively small fee (premium) which will mostly be used to reimburse (indemnify) those insured who experience a large loss as the result of specified events.

Even in the case of Federally subsidized crop insurance where annual indemnities paid have been greater than the sum of all premiums coolected, the net income of insureds who did not collect is reduced by the amount of the premium they paid. The primary purpose of the insurance is to reduce net losses to an acceptable level. Those who feel they can afford to sustain the largest possible loss would probably not insure. But those who cannot absorb the worst outcomes can spread the cost of protection through crop insurance. This is a personal finance decision which must be made by management. One who could handle intermediate-sized losses might well not cover events of that nature and still purchase other coverage on larger risks. One might not buy health insurance for minor illnesses but opt for coverage on major diseases which could result in prolonged hospitalization. One should be more concerned with maximum losses than with loss frequency , and with the catastrophic effects of the loss on the survival of the business. On occasion, the incentive for covering potential losses comes from the lender whose funds might be at risk in the case of a large loss.

METHODS OF RISK MANAGEMENT

It is generally known that farming is a risky business because farmers must deal with most of the elements of risk with which other businessmen must cope, and other forms which are less severe or non-existant in other businesses. Some of these categories of risk and opposing strategies are:

A. Diversification.
   1. Grow different crops which use moisture at different times of the year, and are not susceptible to the same diseases or insects.
   2. Plant different varieties at staggered planting dates.

B. Dispersion.
   1. Acquire access to land dispersed at right angles to the prevailing path of storms, or even in separate communities.

C. Forward Pricing.
   1. Contract known price before planting a crop.
   2. Learn to use Futures Market to hedge against price fluctuations.
   3. Learn to use Options Markets to offset part of unanticipated price movements.

D. Shared Ownership.
   1. Rent land on crop-share basis instead of financed purchase or cash rental.
   2. Partnership arrangements sharing profits and losses.

E. Insurance.
   1. Casualty insurance on insurable assets.
   2. Crop insurance.

F. Conservative financial structure.
   1. Sell assets which can be rented, using proceeds to reduce debt and interest payments.
   2. Switch from capital intensive enterprises to those which require less operating capital.

All of the techniqes above reduce risk, and they all carry an associated cost or possibility of reduced income opportunities. They do, however, reduce exposure to financial loss and foreclosure when events do not turn out as well as planned.

Successful use of these risk management tools requires knowlege of how and when they can be employed, collection of information, and action at the appropriate time.

Where Help is Available

More information and help with analysis is available in your community from OSU Extension Agents, Insurance Co. Representatives, and your County ASCS Office.

Topic	Check With
1. Establishment of Actual Production History	ASCS
2. Premium Rates	Ins.Agent
3. Analysis worksheets.	OSU Ag. Ec. Agent
4. MicroComputer programs for analysis	OSU Ag. Ec. Agent

OSU Area Agri. Econ. Specialists are located in Guymon, Enid, Altus, Duncan, Ada, McAlister, Muskogee, and Claremore.

Selecting a Coverage Level

The worksheet below is provided for the purpose of estimating the costs and returns from utilizing Multi-Peril insurance on your farm. The example column illustrates how to compute the results for each of the lines. Try several difference "Expected Crop Yields" on line #1 while leaving the APH constant, since it is the difference between these which determine the indemnified yield on line 16. One should also experiment with various levels of coverage on line 7 and price elections (from Table I on page 2) in line 9. Line 13 should contain the dollars per acre to be contributed by this crop to cover the cash flow for the farm.

WORKSHEET
ANALYSIS OF PER-ACRE NET CASH FLOW WITH AND WITHOUT
MULTIPLE PERIL CROP INSURANCE
Level of Coverage _____ Price Election $____

	Example	Yours
Expected Crop Receipts:		
1. Expected Crop Yield for Current Year..........	10.0	___.__
2. Expected market price of crop at harvest time.	3.00	___.__
3. Expected crop receipts........................	30.00	___.__
4. Other payments (deficiency payment, straw, etc.	2.33	___.__
5. Total Receipts: Line 3 + line 4................	32.33	___.__
Insurance Premium:		
6. APH (Actual Production History Yield).........	28.0 bu/A	___.__
7. Level of Yield Coverage chosen.(.50,.65,or .75)	.65	___.__
8. Premium Rate for yield level chosen.*	.075	___.__
9. Crop Price election..........................$	2.50	___.__
10. Insurance Premium. (Ln 6 x Ln 7 x Ln 8 x Ln 9).$	3.41	___.__
Expected Cash Requirements:		
11. Preharvest Cash Operating Expense...............$	50.00	___.__
12. Harvest Cash expenses for yield on line 1......$	22.20	___.__
13. Debt service, Family living, Other cash expense$	12.00	___.__
14. Total Cash Requirements........................$	84.20	___.__
Insurance Payment Received:		
15. Line 6 + Line 7 (APH x Lvl of Coverage)	18.20	___.__
16. Ln 15 – Ln. 1 (zero if result is negative)	8.2 bu/A	___.__
17. Insurance Payment (Ln 9 x Ln 16: 2.50x8.2=	$20.50	___.__

18. Net Cash Flow=Ln 5 – Ln 10 – Ln 14 + Ln 17
$$32.33 - 3.41 - 84.20 + 20.50 = -\$34.78 \qquad ___.__$$
BREAK EVEN YIELD= Ln 15 – (ln10 / Ln 9)
$$18.2 - (3.41 / 2.5) = \qquad 16.84 \text{ bu/A} \qquad ___.__$$

* May be obtained from Insurance Agent.
** Insurance will increase cash flow if expected yield is less than the break-even yield.