

Multiple Peril Crop Insurance

Multiple Peril Crop Insurance (MPCI) is a broad-based crop insurance program regulated by the U.S. Department of Agriculture and subsidized by the Federal Crop Insurance Corporation (FCIC). Crops eligible for MPCI coverage in Iowa include corn, soybeans, oats, wheat, seed corn, popcorn, barley, potatoes, sweet corn, canning beans, dry beans, forages, grain sorghum, green peas, tomatoes, and nursery stocks. Not all of these crops can be insured in all counties.

What causes of yield losses are covered?

For most crops, MPCI covers unavoidable production losses caused by drought, excessive moisture, hail, wind, frost/freeze, tornado, lightning, flood, insect infestation, plant disease, excessive temperature during pollination, wildlife damage, fire, and earthquake.

MPCI does not cover losses resulting from poor farming practices, low commodity prices, theft, and specified perils that are excluded in some policies. There are specific restrictions on some crops based on acceptable farming practices.

How much coverage can I purchase?

There are two decisions that determine the amount of protection obtained from MPCI:

- the level of yield coverage chosen
- the level of price coverage chosen

Your insurance yield is based on your actual production history (APH), which is an estimate of your average yield on the insured unit for four to ten consecutive years.

Level of coverage

You can insure your crop at from 50 to 85 percent of your APH yield, in increments of 5 percent.

Your yield guarantee per acre is equal to your APH insurance yield multiplied by the level of coverage you choose.

Example 1. Guaranteed yield

Assume: 130 bu. APH insurance yield
65% level of coverage

Yield guarantee equals:
 $130 \text{ bu.} \times 75\% = 97.5 \text{ bu. per acre}$

For what price is my crop insured?

You must select an indemnity price level at which yield losses are converted into cash. For example, 2003 maximum price elections set by the Risk Management Agency (RMA) for selected crops were:

corn	\$2.20/bu.
wheat	\$2.90/bu.
soybeans	\$5.15/bu.
oats	\$1.40/bu.
grain sorghum	\$2.10/bu.

You can choose an indemnity price between 55 and 100 percent of these maximum elections.

A low cost, minimum level disaster policy, called “catastrophic” coverage, is available. It insures your crop for 50 percent of your APH yield and 55 percent of the RMA price. More information can be found in ISU Extension Publication FM 1852, *Catastrophic Crop Insurance*.

How are indemnity payments calculated?

If your actual average yield (adjusted for quality) is equal to or greater than your yield guarantee, no indemnity is paid. If your average yield per acre is less than your yield guarantee, the indemnity paid is equal to the yield difference times the indemnity price, times the number of acres insured.

Example 2. Indemnity payment

Assume:

97.5 bu. yield guarantee

\$2.20 price election

300 acres insured

81 bu. actual yield

Indemnity payment:

$97.5 \text{ bu.} - 81 \text{ bu.} = 16.5 \text{ bu.}$

$16.5 \text{ bu.} \times \$2.20 = \$36.30$

$\$36.30 \times 300 \text{ acres} = \$10,890$

Indemnity payments are taxable income. However, they can be reported in the tax year following harvest if you normally sell half or more of your crop then.

How much does crop insurance cost?

Premium rates are based on the coverage level chosen and the loss history for the county in which you farm. The premium rate, as a percent of the dollar value of protection, also varies with your APH yield.

Your premium per acre is calculated as follows:

insurance APH yield
x percent yield coverage election
x indemnity price election
x premium rate
x subsidy factor

Example 3. Premium cost

Assume:

APH yield of 130 bu./acre

75 percent coverage level

Indemnity price of \$2.20/bu.

Premium rate of 4.4 percent

Subsidy factor of .45

The premium is: $130 \text{ bu./acre} \times 75\% \times \$2.20/\text{bu.}$
 $\times .044 \times .45 = \4.25 per acre

If you elect to insure all your acres of the same crop as a single unit, the premium will be discounted by 10 percent. There is also a processing fee of \$100 per crop for coverage levels less than 65 percent of APH yield and 100 percent of the RMA price. For higher coverage levels the fee drops to \$30 per crop.

You have the option of buying MPCI with or without hail and fire coverage. However, if you

choose to opt out of the hail and fire insurance component of MPCI, an equivalent dollar amount of hail and fire coverage must be purchased with a separate hail and fire policy. MPCI premiums will be reduced if hail and fire coverage is excluded.

Premiums are generally due during the normal harvest period. If they are not paid within 30 days of billing interest may be charged for late payment. If an indemnity is paid, the premium cost will be deducted from the indemnity. Premium payments are a tax deductible expense.

To encourage broader participation, Congress authorized FCIC to subsidize MPCI premiums. The percent of the premium that is paid from this subsidy varies from 100 percent for catastrophic level coverage to about 38 percent or less for the highest levels of coverage.

How is actual production history yield computed?

Your APH yield is a simple average of from four to ten consecutive years of actual yields based on your production records. If you cannot prove four consecutive years of yields, "T yields" will be substituted for the missing years. The T yields vary by county, and are equal to the most recent 10-year county average yield.

If only one year of the four is missing, the T yield is used for the missing year. However, if two or more years are missing, you can use only a percentage of the T yield, as shown below.

1 year missing - use 100 percent of T yield

2 years missing - use 90 percent of T yield

3 years missing - use 80 percent of T yield

4 years missing - use 65 percent of T yield

Estimated premiums for MPCI and other types of crop insurance policies can be obtained from a crop insurance agent or the following internet site: www.farmdoc.uiuc.edu/cropins/

In Example 4, the APH yield ranges from 130 bushels if yields can be proven for all four years, to only 74 bushels if no yields can be proven. If you select the 65 percent level of coverage, the yield guarantee would range from 85 bushels to 48 bushels per acre.

Example 4. Computing the APH yield

Assume:

Your actual yields for four consecutive years are shown below. The T yield for corn is 114 bushels per acre in your county.

1st year yield = 168 bu.
2nd year yield = 70 bu.
3rd year yield = 153 bu.
4th year yield = 130 bu.
APH yield = 130 bu. avg.

Assume you are missing records for one or more of the four years.

FSA yield = 125 bu./acre
T yield = 114 bu./acre

<u>missing one year</u>	<u>missing two years</u>
168	168
70	70
153	103 (T x 90%)
<u>114 (T x 100%)</u>	<u>103 (T x 90%)</u>
126 bu. avg.	111 bu. avg.

<u>missing three years</u>	<u>missing four years</u>
168	74 (T x 65%)
91 (T x 80%)	74 (T x 65%)
91 (T x 80%)	74 (T x 65%)
<u>91 (T x 80%)</u>	<u>74 (T x 65%)</u>
110 bu. avg.	74 bu. avg.

What if my crop is planted late?

Late planting and prevented planting coverage are included as automatic features of MPCI. There are two time periods that affect this coverage: the late planting period and the prevented planting period.

Late planting coverage

There is a 25-day late planting period. It starts on June 1 for corn and June 16 for soybeans. The production guarantee is reduced 1 percent for 25 days, for a maximum reduction of 25 percent. Premiums do not change on late planted acres.

Example 5. Late planting

You have an APH corn yield of 120 bu. per acre insured at the 75 percent coverage level. The production guarantee is 90 bu. per acre (120 bu. x 75% = 90 bu.). Wet weather prevents you from planting 80 acres of the crop until June 13.

The production guarantee is reduced by:
June 1-13 1% x 13 days = 13%

The new guarantee on the 80 acres is 78.3 bushels per acre (90 bushels x 87 %).

If you are unable to plant until after the late planting period is over (June 25 for corn and July 10 for soybeans), the insured crops will be covered at 60 percent of the original production guarantee for timely planted acreage. For an added premium this minimum coverage can be raised.

Preventing planting coverage

If you are prevented from planting a crop at all, MPCI prevented planting coverage will guarantee you 60 percent of the original yield coverage. No other crop may be planted for harvest on these acres, although forage crops for haying and grazing are allowed.

Late and prevented planting provisions do not apply to areas smaller than 20 acres, or 20 percent of the acreage intended to be planted in the unit for units larger than 100 acres. Premiums on late planted or unplanted acres remain the same as for timely planted acres.

You must report all acres timely planted, late planted, or not planted at all within three days of either the final planting date or the date you stop planting the crop during the late planting period. It is important to remember that the yield guarantees and actual yields on late planted or prevented planted crops are averaged together with all timely planted acres in the same insurance unit rather than considered separately.

Example 6. Prevented planting

Wet weather delays planting one entire insurance unit of corn until June 20. You decide to plant soybeans instead.

Yield guarantees:
corn 90 bu. (120 bu. x 75%)
soybeans 33 bu. (44 bu. x 75%)

Price guarantees:
soybeans \$5.15 per bu.

Your soybean yield guarantee is now reduced by 5% (1% per day for five days), to 31.35 bushels. If your actual soybean yield in this field is only 30 bushels per acre, your soybean insurance payment will be \$6.95 per acre (1.35 bu. x \$5.15 per bu.).

What if I have to replant my crop?

If an insured crop is severely damaged for a reason due to a natural peril and will not produce at least 90 percent of the guaranteed yield, you can receive a payment equal to your costs for replanting. The maximum replant coverage is equal to 20 percent of the guaranteed yield (up to 8 bushels for corn and 3 bushels for soybeans) multiplied by the price election chosen in the policy.

Even if the crop is replanted, the production guarantee is still based on the original planting date. The replant option is not available for catastrophic level coverage.

Example 7. Replanting

Your insured soybean crop is hit with a late frost, and is projected to yield only 25 bushels per acre. You decide to replant.

MPCI coverage: 33 bu. (44 bu. x 75%) @ \$5.15.

Projected yield is less than 90 percent of the guaranteed yield (33 bu. x 90% = 29.7 bu.).

Since 20 percent of your guaranteed yield (33 bu. x 20% = 6.6 bu.) is more than 3 bushels, you can receive a maximum payment equal to the indemnity value of only 3 bushels per acre.

Maximum payment received is \$15.45 per acre (3 bu. x \$5.15).

Other decisions about MPCI

- Consider companion hail and fire insurance. It's your choice, in any given year, whether to include hail and fire protection in the MPCI policy or insure against these specific risks under a separate policy.
- Consider *optional insurance units*. If certain location, farming practice, and record keeping criteria are met, then your acreage can be divided into separate insurance units. This means you could collect for a loss on one unit even if production on other units is more than the guarantee. For most field crops, producers who elect to insure their acreage as a single unit will receive a 10 percent premium discount.
- Consider increasing the yield coverage level or the price coverage level with supplemental policy options. These are available for an additional premium cost to borrowers who wish to have higher levels of protection.

Multiple Peril Crop Insurance offers many combinations of coverage levels, unit designations, and add-on features. See your local insurance agent to get details about coverage and premiums available for your own farm.

Prepared by Don Hofstrand, extension farm management field specialist, and William Edwards, extension economist.

File: Economics 1-2

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Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Stanley R. Johnson, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

Actual Production History and Insurance Units for Multiple Peril Crop Insurance

The first step in developing a crop risk management program for a farm is to establish the proven yield and unit structure. The **Actual Production History** (APH) is used to set the guarantees under all of the FCIC-backed insurance plans except the Group Risk Plan (GRP). True risk protection must be based on the farm's own production potential. Providing historical yield records is the most realistic method of estimating it.

Actual Production History

Proving an APH yield requires records for a minimum of four years and a maximum of ten years for each insurance unit. Information used to prove crop yields can include sale receipts, farm or commercial storage records, and feed consumption records. The records must be for continuous years, starting with the most recent year and continuing back in time. Once a missing year is reached, no history prior to that date may be used. For example, if a producer has nine years of production records spanning a ten-year period, only the years after the missing one are counted. Dropping out a yield from one year because of poor production in that year is not allowed. An exception is made if the crop being insured was not planted in a certain year. In that case a zero acreage report is submitted and continuous records are maintained even without data for that year. This is important for growers who rotate crops and those who have summer fallow acres that are normally not planted to the same crop continuously.

Transition Yield

If at least four successive years of records are not available, a **transition** or "**T**" yield for each

missing year must be substituted. Each county has a different T yield. It is based on the historical county average yield for the past 10 years. Growers with no records at all are assigned 65 percent of the T yield as their APH yield (Example 1). Growers with a record for one year receive 80 percent of the T yield for the other three years. With two records they receive 90 percent of the T yield, and with three records they receive 100 percent of the T yield for the one remaining year needed to calculate the APH. Once each year has been assigned a yield the APH is just a simple average of the four yields.

If only a few years of yield records exist the APH yield may be considerably below the actual expected yield, because of the reduced T yields. In that case, buying a GRP policy may be a good strategy, since GRP guarantees are based on county yields rather than individual farm yields. This could provide a higher level of protection while building records to establish an APH yield. See ISU Extension publication FM 1850, *Group Risk Plan and Group Risk Income Protection*, for more information.

A new farmer or one who has never planted the crop to be insured will receive 100 percent of the T yield for the APH. If he/she continues to plant the crop for four years, the T yields will be replaced with the actual production each year. New producers who have previously been closely associated with farming a particular unit, such as children taking over a family farm, can use the previous operator's records to establish an APH yield.

Once four years or more of production history are available the APH is the simple average of all of the yearly reported yields. The four years of history will eventually build to ten years. After ten

years of history are reached, the APH becomes a moving ten-year average yield. As each new year of production history is added the oldest record is dropped out of the calculation.

Example 1. Calculating an APH Yield

This is how the APH yield would be calculated for a farm in a county with a transitional “T” yield of 120 bushels.

	4 Years of Records	3 Years of Records	2 Years of Records	1 Year of Records	No Records
Year 1	145 bu.	120 bu. x 100% = 120 bu.	120 bu. x 90% = 108 bu.	120 bu. x 80% = 96 bu.	120 bu. x 65% = 78 bu.
Year 2	98 bu.	98 bu.	120 bu. x 90% = 108 bu.	120 bu. x 80% = 96 bu.	120 bu. x 65% = 78 bu.
Year 3	117 bu.	117 bu.	117 bu.	120 bu. x 80% = 96 bu.	120 bu. x 65% = 78 bu.
Year 4	138 bu.	138 bu.	138 bu.	138 bu.	120 bu. x 65% = 78 bu.
APH Yield	124.5 bu.	118.25 bu.	117.75 bu.	106.5 bu.	78.0 bu.

Cup, Cap and Floor

When a new yield record is added to the APH history, the APH has a “cup” of ten percent, that is, the proven yield is not allowed to decline by more than ten percent in one year. Likewise, when a bumper crop record is added, the APH cannot increase by more than a “cap” of 20 percent in one year. A bumper crop yield will eventually work its way completely into the average because the following year the APH can again increase up to 20 percent.

The APH also has a “floor” equal to 70 percent of the T yield for growers with only a one-year record. Growers with two to four years of yield records have a floor equal to 75 percent of the T yield, while growers with five or more yield records have an 80 percent of T yield floor. This prevents a year in which a producer has a severe crop failure from having a disproportionately large

influence on the APH yield, especially when only a few years of yield records are available.

Producers can also request that a low yield for a particular year be replaced with a yield equal to 60 percent of the county T yield. In effect, this becomes the minimum reported yield. This adjustment can be requested for any past year used to calculate the APH yield.

Although the APH yield is usually just a simple average of the production history for each insurance unit, a grower who enters farming, adds new land, plants a new crop, produces a bumper crop or has a crop failure can cause one or more of the special provisions to be implemented. That is why it is a good idea to establish the APH for each insurance unit with a licensed crop insurance agent long before the sign-up date. Even for the CAT level of coverage an APH value for each farm units is needed. It will also allow higher levels of

coverage under one of the available revenue insurance contracts.

Insurance Units

Each parcel of land that is insured independently of other parcels is called a “unit.” One farming operation may have several insurance units. It is possible to be hailed out on one unit and receive an indemnity payment, while other units on the same farm produce a record crop. As a result, many farmers like to divide their land into as many units as possible. Of course, this may result in higher premiums on each one.

Producers can designate a **basic unit** for all tracts of land they own or cash rent within a county. They also receive one basic unit for all of the land they share rent with a different landlord. For example, if a crop is planted on land rented under a crop share lease with Mr. Smith, a crop share lease with Mrs. Jones, and a cash rent lease with Black, Inc., and the rest of the crop land is owned, the entire acreage would qualify for three basic units. There would be one basic unit with each crop share owner, and one basic unit for the cash rented and owned land combined. Each crop share landowner can also insure his/her own interest in the crop as a separate unit.

Each different crop also creates a separate unit, and tracts of land in different counties must be insured as separate units. Each crop can have a different type of policy and level of coverage, and could receive an indemnity payment independent of the other units. Separate production records must be kept for each basic unit. Insuring all acres as basic units entitles producers to a 10 percent discount on their premiums.

Optional Units

If the same four farms described above were all owned or rented under a cash lease, they would qualify for only one basic unit for each crop. However, if the four farms were located in four different township sections, the operator could elect to insure them as four separate **optional units**, with separate policies. Separate APH records must be reported for each optional unit, and the operator would not receive the ten percent premium discount.

Optional units may also be designated when a crop

is being grown under distinctly different farming practices. For example, a grower with both irrigated and dryland acres of the same crop may qualify for optional units. There must be an obvious break between the irrigated and dryland acres, however. Other special farming types or practices may also qualify acres to be insured as separate units.

Enterprise Units

An **enterprise unit** combines all of the acres of a single crop within a county in which the policy holder has a financial interest into a single unit, regardless of whether they are owned or rented, or how many landlords are involved. For example, corn-soybean growers could have just two enterprise units for all their land, a corn enterprise unit and a soybean enterprise unit. Since the enterprise units would usually be larger than basic units or optional units, it is less likely that the average yield would be low enough to trigger an indemnity payment in a given year. Consequently, premiums are usually lower for enterprise units. Each enterprise unit must contain at least 50 acres, however.

MPCI policies offer enterprise units as an option, while Income Protection (IP) offers only enterprise units. Revenue Assurance (RA) provides a premium discount for selecting enterprise units. The discount is based on the number of township sections included in the acres used to form the enterprise unit.

Crop Revenue Coverage (CRC) also offers a premium discount for enterprise units on land that would normally qualify for more than one basic unit. The CRC enterprise premium discount is based on the number of acres in the enterprise unit—more acres will qualify for a larger discount.

Whole Farm Unit

Growers who are willing to combine both their corn and soybean acres into a single insurance unit can gain an additional premium discount. This is called a **whole farm unit**. The amount of the discount will depend on the proportion of the total acres planted to each crop. Growers planting an equal number of corn and soybean acres qualify for the largest whole farm unit premium discount.

All producers should check with an informed crop insurance agent to find out how many and what type of insurance units their crops qualify for, and how this could affect their premiums.

Example 2. Insurance Units

<u>Farm A</u> owned	<u>Farm B</u> 50 - 50 crop share lease from Smith	<u>Farm D</u> cash rent lease from Jones	Township Section 2
Township Section 1	<u>Farm C</u> cash rent lease from Smith	<u>Farm E</u> 50 - 50 crop share lease from Smith	
<u>Farm F</u> Owned		<u>Farm G</u> 60 - 40 crop share lease from Black	Township Section 11
Township Section 12			

Example: Farms A, B, C, D, E, F and G are all farmed by the same operator, and planted to the same crop.

Basic Units:

This operation would qualify for 3 basic units.

Unit 1 includes Farms A, C, D, and F (all owned or cash rented).

Unit 2 includes Farms B and E (both crop share rented from Smith).

Unit 3 includes Farm G (crop share rented from Black).

Optional Units:

This operation would qualify for 6 optional units.

Unit 1 includes Farms A and C (owned or cash rented in Section 1).

Unit 2 includes Farm B (crop share rented in Section 1).

Unit 3 includes Farm D (cash rented in Section 2).

Unit 4 includes Farm E (crop share rented in Section 2).

Unit 5 includes Farm F (owned in Section 12).

Unit 6 includes Farm G (crop share rented in Section 11).

Enterprise Units:

This operation would qualify for one enterprise unit, including all the farms shown. If more than

one crop was being grown, or if some farms were located in a different county, additional enterprise units would be designated.

Whole Farm Unit:

If both corn and soybeans were being grown on the farms shown, all acres could be combined into a single whole farm unit.

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File: Economics 1-2

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