

MMM 447

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Using Multiple Peril Crop Insurance to Protect Revenue Risk for 2007

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Given the bullish commodity markets, producers should be considering their risk management alternatives to protect their revenue for the 2007 crop. There are many alternatives available to manage price risk such as cash forward contracts, hedging with commodity futures or purchasing put options. Management Marketing Memos 443 through 447 describes how corn and soybean producers can implement risk management strategies for the 2007 crop year. One limitation of price risk management alternatives is that they do not protect revenue from yield risk. This memo explains how multiple peril crop insurance (MPCI) can be used to protect against low yields at very little cost to your farm business.

Catastrophic Insurance (CAT)

The minimum coverage offered through MPCI is the catastrophic (CAT) coverage level. CAT insures the crop at 50% of the farm's actual production history (APH) yield and 55% of the MPCI Price (Table 1). The APH yield is based on a minimum of four and a maximum of ten consecutive years of yield data. The yield guarantee for CAT is the APH yield multiplied by 50%. The production loss, used in calculating an indemnity payment, is the yield guarantee less the harvested yield. The indemnity payment for CAT is the production loss multiplied by 55% of the MPCI Price described in Table 1.

Table 1. 2007 Prices for Multiple Peril Crop Insurance (MPCI).

Commodity	2007 MPCI Price
Corn	\$3.50 per bushel
Soybeans	\$7.00 per bushel
Cotton	\$0.53 per pound
Peanuts	\$0.19 per pound

The premium for CAT is \$100 per crop per county. CAT is the minimum coverage level available and will only pay an indemnity for extremely low yields, like those experienced by some producers in the 2002 drought. Example 1 illustrates how CAT insurance works.

Example 1. A cotton producer with an APH yield of 750 lbs./acre decides to purchase MPCI at the CAT level. The harvested yield is 320 lbs./acre. What is the indemnity payment?

$$\text{Yield Guarantee} = \text{APH Yield} \times 50\% = 750 \times 50\% = 375 \text{ lbs./acre}$$

$$\begin{aligned} \text{Production Loss} &= \text{Yield Guarantee} - \text{Harvested Yield} \\ &= 375 - 320 = 55 \text{ lbs./acre} \end{aligned}$$

$$\begin{aligned} \text{Indemnity Payment} &= \text{Production Loss} \times \text{MPCI Price} \times 55\% \\ &= 55 \times \$0.53 \times 55\% = \$16.03/\text{acre} \end{aligned}$$

Under CAT coverage, the cotton producer in Example 1 would receive an indemnity payment whenever the harvested yield falls below the yield guarantee of 375 lbs./acre. CAT only provides protection for severe production losses. However, it is very cheap insurance.

Multiple Peril Crop Insurance (MPCI)

The other MPCI policies insure yield at yield coverage levels of 50%, 55%, 60%, 65%, 70%, and 75% of the APH yield for corn and soybeans. However, cotton yields can be insured at 80% or 85% of the APH yield. Producers also insure the crop at a price level ranging from 55% to 100% of the MPCI Price, called the price election (Table 1). The yield guarantee for MPCI is the APH yield multiplied by the yield coverage level. For MPCI, an indemnity is paid whenever the harvested yield is less than the yield guarantee. The indemnity payment is the production loss multiplied by the MPCI Price and the Price election. Example 2 illustrates the use of MPCI for a corn producer.

Example 2. A corn producer has an APH yield of 100 bu./acre and chooses to insure the crop at 65% of the APH yield and 100% of the MPCI Price. The harvested yield is 50 bu./acre. What is the indemnity payment?

$$\text{Yield Guarantee} = \text{APH Yield} \times \text{Coverage Level} = 100 \times 65\% = 65 \text{ bu./acre}$$

$$\text{Production Loss} = \text{Yield Guarantee} - \text{Harvested Yield} = 65 - 50 = 15 \text{ bu./acre}$$

$$\begin{aligned} \text{Indemnity Payment} &= \text{Production Loss} \times \text{MPCI Price} \times \text{Price Election} \\ &= 15 \times \$3.50 \times 100\% = \$52.50/\text{acre} \end{aligned}$$

Making the Decision to Purchase Insurance

Crop insurance is just one part of a comprehensive risk management program. Only protecting against low prices will not guarantee that you will obtain a revenue level that will cover your variable costs and provide a contribution towards covering your fixed costs. In commodity agriculture, the ability to produce a large quantity at a low cost is still the key to profitability and to having a successful business.

The deadline for purchasing MPCI and CAT insurance is February 28, 2007. Contact your local insurance agent for more information on the insurance products available for your farm business.