

## Risk Management

# Crop Revenue Coverage (CRC)

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Crop Revenue Coverage (CRC) is a comprehensive Multiple Peril Crop Insurance (MPCI) plan that guarantees a stated amount of revenue based on commodity futures prices and the producer's approved yield. CRC protects a producer from loss of revenue resulting from low prices, low yields, or a combination of the two. CRC contains provisions for both yield and price risks; it also provides replacement value protection. This works because the insurance guarantee increases if price increases between the time of planting and harvest. Unlike coverage in the Actual Production History (APH) plan, with a CRC plan the producer does not necessarily have to experience an insurable yield loss to receive an indemnity payment.

## CRC Procedures

CRC has the same acreage and production reporting dates, optional units, and quality adjustment enhancements as the APH plan (see E-471, *The Multiple Peril Crop Insurance Actual Production History Insurance Plan*). An enterprise unit discount is available if basic and optional units are combined. An enterprise unit is all insurable acreage of the insured crop in the county, in which the producer has a share, on the date coverage begins for the crop year. An enterprise unit must consist of two or more basic units (or two or more optional units) of the same insured crop that are located in two or more separate sections, section equivalents, or FSA farm serial numbers. With enterprise units,

the producer must maintain any required production records on a basic or optional unit basis.

## CRC Covered Crops

**Kansas:** corn, cotton, grain sorghum, soybeans and wheat

**Texas:** corn, cotton, grain sorghum, rice, soybeans and wheat

## How CRC Works

Before the sales closing, the producer and his insurance agent establish a **minimum guarantee** per acre. The **minimum guarantee** per acre is the producer's approved yield (same as the APH plan) multiplied by the **base price** (based on the appropriate harvest time futures contract price before planting), multiplied by the producer's selected **coverage level**. Producers can choose coverage levels from 50 to 85 percent (in 5 percent increments).

At harvest time, a **harvest guarantee** is calculated. The **harvest guarantee** is the producer's **approved yield** multiplied by the **harvest price** (based on the appropriate harvest time futures contract price at harvest time), multiplied by the producer's selected **coverage level**. (The harvest price **IS NOT** the price a producer receives for his crop at the local elevator.)

The producer's **final guarantee** is the higher of the minimum guarantee or the harvest guarantee.



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Once the crop is harvested, the producer's **actual production to count** is multiplied by the **harvest price**, which results in the **calculated revenue**. **Production to count** includes harvested and appraised production from the insured acreage as outlined in the crop provisions. Production to count may also include quality adjustments.

The calculated revenue is compared with the final guarantee; if the calculated revenue is less than the final guarantee, the farmer is paid the difference as an **indemnity payment**.

### Base and Harvest Price

The CRC plan has a mandatory **Commodity Exchange Endorsement** that defines how the base and harvest prices are determined. Generally, the base price is an average of the daily settlement prices, for a month before normal planting time, of a harvest time futures contract. The harvest price is an average of the daily settlement prices, for a month near the end of normal harvest, of the harvest time futures contract. The harvest price is used to determine the harvest guarantee and calculated revenue.

The harvest price cannot exceed or fall below the base price by more than \$1.50 per bushel on corn and grain sorghum, \$3.00 per bushel on soybeans, \$2.00 per bushel on wheat, \$.05 per pound on rice, and \$.70 per pound on cotton.

### Examples

Let's look at how CRC would perform under different combinations of higher or lower prices and normal or reduced yields.

**Example 1:** Harvest price is higher than the base price, with a 34 percent production loss:

Approved APH yield = 70 bushels per acre  
 Coverage level = 65 percent  
 Base price = \$2.20 per bushel  
 Harvest price = \$3.00 per bushel  
 Production to count = 46 bushels per acre  
 Final guarantee = Approved yield × coverage level  
 × the higher of the base price or harvest price  
 = \$136.50

CRC Price Determination Specifics				
Crop/sales closing date	Commodity exchange	Futures contract	Base price month	Harvest price month
Corn before 3/15	CBOT	Sept	Dec 15 to Jan 14	Aug
Corn on 3/15	CBOT	Dec	Feb	Oct
Soybeans before 3/15	CBOT	Sept	Dec 15 to Jan 14	Aug
Soybeans on 3/15	CBOT	Nov	Feb	Oct
Winter wheat on 9/30	KCBOT	July	Aug 15 to Sept 14	Jun
Cotton on 1/31	NYCE	Oct	Dec 15 to Jan 14	Sept
Cotton on 2/28 or 3/15	NYCE	Dec	Jan 15 to Feb 14	Nov
Grain sorghum* before 3/15	CBOT Corn	Sept	Dec 15 to Jan 14	Aug
Grain sorghum* on 3/15	CBOT Corn	Dec	Feb	Oct
Rice on 1/31	CBOT	Sept	Dec 15 to Jan 14	Aug
Rice on 2/15 or 2/28	CBOT	Nov	Jan	Oct

\* RMA sets the grain sorghum base and harvest prices based on the relationship between grain sorghum and corn prices.

Calculated revenue = Production to count × harvest price = \$138.00

No indemnity = Calculated revenue (\$138.00) is greater than the final guarantee (\$136.50)

In example 1, prices were higher at the time of the harvest guarantee calculation than at the time of the minimum guarantee calculation. As a result, the final guarantee increased from \$100.10 to \$136.50. However, the combination of the 46-bushel yield and the \$3.00 price provided calculated revenue of \$138 per acre, which was slightly above the final guarantee of \$136.50. So no indemnity was paid out.

**Example 2:** Harvest price is higher than the base price, with a 57 percent production loss:

Approved APH yield = 70 bushels per acre  
 Coverage level = 65 percent  
 Base price = \$2.20 per bushel  
 Harvest price = \$3.00 per bushel  
 Production to count = 30 bushels per acre

Final guarantee = Approved yield × coverage level  
× the higher of the base price or harvest price  
= \$136.50

Calculated revenue = Production to count ×  
harvest price = \$90.00

Indemnity = Final guarantee (\$136.50) – Calculated  
revenue (\$90.00) = \$46.50

In example 2, prices were higher at the time of the harvest guarantee calculation than at the time of the minimum guarantee calculation. As a result, the final guarantee increased from \$100.10 to \$136.50. However, the combination of a 30-bushel yield and a \$3.00 price provided calculated revenue of only \$90 per acre, well below the final guarantee of \$136.50 per acre. In this case, an indemnity payment of \$46.50 per acre was made to the producer. In other words, the 15.5 bushels or 22 percent of the yield loss covered by the policy was replaced at the higher \$3.00 level. This is what is meant when we say the policy covers replacement costs.

**Example 3:** Harvest price is less than the base price, with a 34 percent production loss:

Approved APH yield = 70 bushels per acre

Coverage level = 65 percent

Base price = \$2.20 per bushel

Harvest price = \$1.35 per bushel

Production to count = 46 bushels per acre

Final guarantee = Approved yield × coverage level  
× the higher of the base price or harvest price  
= \$100.10

Calculated revenue = Production to count ×  
harvest price = \$62.10

Indemnity = Final guarantee (\$100.10) - Calculated  
revenue (\$62.10) = \$38.00

In example 3, prices were lower at harvest than at the time of the minimum guarantee calculation. As a result, the final guarantee stayed at \$100.10 per acre. Even though the production loss was only 34 percent (46-bushel yield), the combination of a low yield and a low price generated a calculated revenue of only \$62.10, triggering an indemnity payment of \$38.00 per acre

((\$100.10 minus \$62.10). In this case, the producer would not have received an indemnity payment if he had had only 65 percent APH plan coverage, because the yield fell only 34 percent.

**Example 4:** Harvest price is less than the base price, with a 57 percent production loss:

Approved APH yield = 70 bushels per acre

Coverage level = 65 percent

Base price = \$2.20 per bushel

Harvest price = \$1.35 per bushel

Production to count = 30 bushels per acre

Final guarantee = Approved yield × coverage level  
× the higher of the base price or harvest price  
= \$100.10

Calculated revenue = Production to count ×  
harvest price = \$40.50

Indemnity = Final guarantee (\$100.10) - Calculated  
revenue (\$40.50) = \$59.60

In example 4, prices were lower at harvest than at the time of the minimum guarantee calculation. As a result, the final guarantee stayed at \$100.10 per acre. The combination of a low yield and a low price generated a calculated revenue of only \$40.50, triggering an indemnity payment of \$59.60 per acre. While both the CRC and APH plans at the 65 percent coverage level would have paid indemnities, in this case (57 percent loss), the CRC indemnity is larger because the revenue calculation considered both yield loss and the price decline.

## **Perils Protection**

CRC covers the same perils as MPCI (with an additional price peril):

- adverse weather
- disease
- fire
- insects
- hail
- earthquake
- wind
- wildlife

## **CRC Features**

- Protects cash value, which allows for aggressive marketing strategies
- Provides upside and downside price protection
- Is an alternative to the APH plan
- Offers the same subsidy percentage as the APH plan
- Establishes base and harvest prices using the national commodity exchanges
- Uses a producer's own Actual Production History in establishing guarantees on a unit basis
- Protects against perils of price and yield; no yield loss is needed for indemnity
- Uses the market-based guarantees before planting as the minimum at harvest time

- Discounts for combining units
- Requires higher premiums than the APH plan
- In some cases, pays lower indemnity payments than the APH plan. This could happen only if the FCIC set the APH plan market price higher than the CRC base price. The APH plan sometimes overpays losses because the loss is not based on the market value of the crop, whereas the CRC plan pays on the basis of market-determined prices.

## **Reference**

Risk Management Agency, USDA. Various documents. Last updated March 2008.  
<http://www.rma.usda.gov>

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