

Crop Insurance Basics

The federal crop insurance program (FCIP) is a critical tool in financial risk management for row crop producers. The FCIP offers Mississippi row crop producers the opportunity to purchase insurance coverage that protects against various perils. In 2024, Mississippi producers insured over 3.6 million acres valued at over \$1.9 billion. Soybeans accounted for the bulk of the insured value at approximately \$1.02 billion, followed by cotton (~\$414 million) and corn (~\$319 million). The federal government subsidizes producer premiums to encourage participation.

Crop Insurance Terms

The FCIP functions as a master insurance policy, offering various options for row crops. For row crops, the options are yield protection (YP), revenue protection (RP), revenue protection with harvest price exclusion (RP-HPE), and catastrophic coverage (CAT). While not covered in the publication, producers also have the option to purchase area insurance plans, like supplemental coverage option (SCO) and enhanced coverage option (ECO). Each option is a multi-peril plan that protects yield from natural causes such as drought, excessive moisture, hail, wind, frost, insects, and disease. In addition to yield, revenue protection options protect against declining commodity prices. Insurance policies offer coverage levels of 50% to 85% in increments of 5%. Each insurance policy option shares critical components that affect how the policy works and the cost of the premium.

Projected and Harvest Prices

Each policy shares one “projected price” and one “harvest price” determined by the Commodity Exchange Price Provisions. When signing an insurance contract, the

projected price establishes the insured crop’s value. Since crop insurance policy contracts must be selected and signed before the start of the growing season, futures market prices are used to establish the projected price for crops traded on exchanges.

The projected price for a commodity is calculated as the average daily settlement price of the harvest time futures price during the projected price discovery period. For example, the Mississippi projected price for corn is the average daily price of the CBOT December corn futures contract from January 15 to February 15.

The harvest price is determined similarly but uses a different harvest price discovery period. Table 1 shows the price discovery periods for various crops in Mississippi. Other regions of the United States will have different price discovery periods due to varying production timelines. The projected price directly impacts crop insurance premiums. A higher projected price means a higher value of the insured crop, leading to higher premiums.

Actual Production History

In conjunction with the projected price, actual production history (APH) is used as the expected yield to establish the insured value of the covered commodity. While the projected price is constant across insurable units, the APH will be unique to each insurable unit. This ensures the insurance guarantee reflects the unit’s expected yield and risk. Higher APH yields increase the value of the insured commodity and the crop insurance premium.

Producers must use farm production records to establish an APH for each insured unit. Acceptable reports

Table 1. Mississippi crop insurance price discovery periods.

Crop	Futures contract	Contract month	Projected price		Harvest price	
			Beginning date	Ending date	Beginning date	Ending date
Corn	CBOT corn	December	Jan 15	Feb 14	Aug 15	Sep 15
Cotton	ICE cotton	December	Jan 15	Feb 14	Aug 15	Sep 15
Grain sorghum	CBOT corn	December	Jan 15	Feb 14	Aug 15	Sep 15
Rice	CBOT rice	November	Jan 15	Feb 14	Aug 15	Sep 15
Soybeans	CBOT soybeans	November	Jan 15	Feb 14	Aug 15	Sep 15

include sales receipts, elevator receipts, gin records, etc. Producers can submit up to 10 years of records to document actual yields but must have at least 4 years of yields. RMA will substitute missing years with a county-specific transition yield (T-yield) for producers with less than 4 years of records. Typically, the producer is assigned 65% of the T-yield; however, in some instances, they may be assigned 80% or even 100%. All years' actual yields reported must be continuous, but for most row crops, a valid acreage report indicating the insured crop was not planted is considered a year of records for continuity of production reports (for example, crop rotations).

Insurance Units

Producers can designate insurable acreage of the same crop into different types of insurance units, listed below. One producer can have multiple insurance units.

- **Basic units** – Basic units can be designated for all the insurable acreage planted to the same crop in the county, either owned or cash-rented by the producer. Additionally, a basic unit can be designated for all acreage leased on a crop-share basis. Multiple crop-share agreements, though, cannot be combined into one basic unit. For example, consider a producer who plants soybeans on five fields. The producer owns Field A, cash rents Fields B and C, and rents Fields D and E on crop-share agreements from two different landowners. In this case, the producer would be eligible for three basic units. Fields A, B, and C could be combined into one basic unit because the producer has 100% of the crop share in those fields. Fields D and E would each be eligible for separate basic units since they crop-share rented from different landlords. Each landlord can also insure their interest in the crop. Basic units have no minimum or maximum acreage requirement.
- **Optional units** – Basic units can be subdivided into optional units based on geographic boundaries. From the previous example, Fields A, B, and C qualify for one basic unit. If the three fields were located in multiple sections of a county, the producer could insure each field in each section as an optional unit. A section is equivalent to township boundaries under the Public Land Survey System and is usually 1 square mile containing 640 acres. Optional units can also be used to insure irrigated and dryland acreage separately.
- **Enterprise units** – An enterprise unit is all the insurable acreage for a crop in a county where the policyholder has a financial interest. Acreage can be combined into an enterprise unit regardless of whether owned, cash-rented, or crop-share rented. The producer from the above example could combine

all five fields into one enterprise unit, but there are some restrictions. To qualify for an enterprise unit, two or more basic units or two or more optional units must be combined, and the crop must be grown in at least two sections within a county. Enterprise units have a minimum acreage of the smaller of 20 acres or 20% of the total area of that crop. Enterprise units can be separated by irrigation practice, whether or not they follow another cropping practice, and type.

- **Whole farm units** – A whole farm unit consists of all crops grown and all land insured for the farm within a county. The producer above could combine all five soybean fields with all other crops grown to qualify for a whole farm unit. Whole farm units provide the most significant additional premium discount since the risk of crop failure is spread over a greater area.

Types of Policies

Yield Protection

Yield protection (YP) policies protect against crop yield loss. Producers are required to select a coverage level ranging from 50% to 85% in 5% increments. The coverage level determines the guaranteed yield by multiplying it by the insurance unit's APH.

As in the example below, assume a farm has a soybean APH of 60 bushels per acre and chooses 75% coverage level, and the projected price is \$12 per bushel. The yield guarantee would, therefore, be 45 bushels per acre. An indemnity payment would be triggered if the actual yield fell below 45 bushels.

To further the example, assume the farm experiences an actual yield of 40 bushels per acre. Since the actual yield is below the yield guarantee, the producer would receive an indemnity payment of \$60 per acre. The indemnity payment equals the difference between the yield guarantee and the actual yield times the projected price. It is important to note that a yield protection policy does not cover low commodity prices, and the yield loss is only valued at the projected springtime price.

Example 1. Yield protection for soybeans.

Variable	Amount
A. Projected price	\$12
B. APH	60 bushels
C. Coverage level	75%
D. Yield guarantee (B × C)	45 bushels
E. Actual yield	40
F. Indemnity payment (D - E) × A	\$60/acre

Revenue Protection

A revenue policy protects against decreased yields and prices by providing producers with a projected revenue based on the projected price and APH. Producers are guaranteed a percentage of the projected revenue, based on coverage level ranging from 50% to 85% in 5% increments. Two types of revenue policies are available: revenue protection (RP) and revenue protection with harvest price exclusion (RP-HPE). Both policies function similarly, but RP allows for an increase in guaranteed revenue if the harvest price exceeds the projected price. In contrast, RP-HPE does not include this feature and will always rely on the projected price to determine the revenue guarantee. As a result of this exclusion, RP-HPE typically has a lower premium than RP.

To understand how a revenue policy works, Example 2 shows a scenario where a producer faces lower prices and yields. Since the harvest price will be lower than the projected price, RP and RP-HPE will have the same outcome. Assume that the projected price is \$12 per bushel and the insurance unit's APH is 60 bushels per acre. If the producer selects 75% coverage level, their revenue guarantee would be \$540 per acre. At harvest time, assume the producer experiences an actual yield of 40 bushels and the harvest price is \$10 per bushel. Actual revenue would be \$400 per acre. Since the actual revenue is less than the revenue guarantee, the producer will receive an indemnity payment equal to the difference. In this case, the producer receives a \$140 per acre indemnity.

Example 2. RP and RP-HPE: lower prices and lower yields.

Variable	RP	RP-HPE
A. Projected price	\$12	\$12
B. APH	60	60
C. Coverage level	75%	75%
D. Revenue Guarantee ($A \times B \times C$)	\$540	\$540
E. Harvest price	\$10	\$10
F. Actual yield	40	40
G. Actual revenue ($E \times F$)	\$400	\$400
H. Indemnity ($D - G$)	\$140	\$140

Unlike yield protection, a revenue policy can still make an indemnity payment without yield loss. Example 3 presents a scenario where a producer faces lower prices but does not experience a yield loss. As previously, the producer chooses the 75% coverage level and has a revenue guarantee of \$540 per acre. In this scenario, assume the actual yield equals the APH, but the harvest price declines to \$8 per bushel. The producer has an

actual revenue of \$480 per acre and receives a \$60 per acre indemnity payment.

Example 3. RP and RP-HPE: lower prices.

Variable	RP	RP-HPE
A. Projected price	\$12	\$12
B. APH	60	60
C. Coverage level	75%	75%
D. Revenue Guarantee ($A \times B \times C$)	\$540	\$540
E. Harvest price	\$8	\$8
F. Actual yield	60	60
G. Actual revenue ($E \times F$)	\$480	\$480
H. Indemnity ($D - G$)	\$60	\$60

In the previous examples, RP and RP-HPE led to the same outcomes because the harvest price was lower than the projected price. In Example 4, the outcomes of the two policies will diverge due to a higher harvest price. Assume the same starting scenario as before, with a revenue guarantee of \$540 per acre. Now, assume the harvest price is \$14 per bushel. Since the harvest price is greater than the projected price, the RP policy will recalculate the revenue guarantee using the higher price. The adjusted revenue guarantee for RP will be \$630. The RP-HPE policy excludes the harvest price and will not update the revenue guarantee. An actual yield of 40 bushels leads the RP policy to pay a \$70 indemnity per acre, while the RP-HPE policy does not trigger a payment.

Example 4. RP and RP-HPE: higher prices and lower yields.

Variable	RP	RP-HPE
A. Projected price	\$12	\$12
B. APH	60	60
C. Coverage level	75%	75%
D. Revenue Guarantee ($A \times B \times C$)	\$540	\$540
E. Harvest price	\$14	\$14
F. Adjusted revenue guarantee RP: ($E \times B \times C$); RP-HPE: ($A \times B \times C$)	\$630	\$540
G. Actual yield	40	40
H. Actual revenue ($E \times G$)	\$560	\$560
I. Indemnity ($F - H$)	\$70	\$0

Premiums

The Risk Management Agency (RMA) is responsible for rating crop insurance premiums to be actuarially sound. Premium rates include the anticipated losses but do not include the cost of sales, loss adjustments, or RMA's operating cost. RMA will consider the actual production history in the rating process, and rates are established

independently of crop and geographic region. Insurance is usually rated individually for each county where production occurs.

The producer’s insurance cost depends on several factors, including the type of crop, location, type of insurance, APH yield, coverage level, unit structure, and production practices. Generally, higher-value crops come with higher premiums. Insurance rates are determined by the projected price of the crop, so a higher projected price leads to more expensive insurance. Additionally, opting for higher coverage levels will result in higher premiums due to the increased likelihood of an indemnity payment.

Different unit structures also affect premiums. Basic units and optional units are the most expensive because they cover the smallest geographical area, concentrating risk. In contrast, whole farm units, which spread risk across a larger area, are the least expensive. As the geographical coverage increases with other unit structures, the risk decreases, leading to lower premiums.

RMA assigns varying premiums based on production practices. For instance, irrigated crops typically have lower premiums than non-irrigated ones due to the reduced risk associated with water availability.

Subsidy Rates

A portion of the crop insurance premium owed by a producer is subsidized. Table 2 shows the current premium subsidies according to coverage level and unit. Basic and optional units have the same subsidy levels, which range from 67% for 50% coverage to 38% for 85% coverage. Enterprise units have a flat 80% subsidy for coverage levels up to 70%, when it begins to decrease. Whole farm units have a flat 80% subsidy until 75%, when it starts to decrease. While enterprise and whole farm have higher subsidy levels, actual premium rates will vary across units, coverage levels, and product types. Producers should discuss the cost of various insurance options with their crop insurance provider.

Table 2. Crop insurance premium subsidies (%) by coverage level and insurance unit.

Unit	Coverage Level								
	CAT	50%	55%	60%	65%	70%	75%	80%	85%
Basic/optional	100	67	64	64	59	59	55	48	38
Enterprise	n/a	80	80	80	80	80	77	68	53
Whole farm	n/a	80	80	80	80	80	80	71	56

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By **Will Maples**, PhD, Associate Professor, and **Brian Mills**, PhD, Assistant Professor, Agricultural Economics.

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