

# Crop Insurance for Cotton Producers: Key Concepts and Terms

With large investments in land, equipment, and technology, cotton producers typically have more capital at risk than producers of other major row crops. Effective risk management is very important to survival in the cotton industry. Crop insurance can provide an effective means of managing risk in cotton production.

## Overview

In a very general sense, crop insurance works like the insurance on your truck. You select a coverage plan, pay a premium based on that coverage, and receive a payment (called an indemnity) if your truck is damaged. Your policy will contain a deductible—some threshold for the value of damage that must be met before the insurance will pay. On the surface, at least, purchasing crop insurance is no different. Once you have decided on a type of policy, you select a level of coverage and pay a premium for that coverage. If you experience a crop loss in excess of your coverage level, you receive an indemnity from the insurance company.

Of course, crop insurance is not exactly like auto insurance. One obvious difference is that it is harder to establish an expected value for a crop than it is to establish a value for an asset such as a pickup truck. Also, all farms—even fields on the same farm—are not as similar as, for example, all same-model-year, three-quarter-ton, four-wheel-drive pick-up trucks. In short, the process of describing exactly what is being insured and its value is more complicated with crop insurance than with other types of insurance. In order to make good decisions, it is important to understand a few fundamental concepts.

## Plans of Insurance

For crop insurance that provides coverage based on a producer's own operation, there is now one master policy, the Common Crop Insurance Policy, with three plans of insurance:

- ▶ Yield Protection (YP)
- ▶ Revenue Protection (RP)
- ▶ Revenue Protection with Harvest Price Exclusion (RP-HPE)

All three policies have the same **projected price** determined by the Commodity Exchange Price Provisions (CEPP), as well as one set of **basic provisions** and **crop provisions** and a single set of **actuarial documents**. YP coverage only provides protection against a yield loss.

RP coverage provides protection against a revenue loss (i.e., a loss in the crop value from yield or price). RP coverage accomplishes this by calculating the amount of protection on the higher of the projected price or harvest price. RP-HPE coverage provides protection against a decline in revenue. RP-HPE calculates the amount of liability based on the projected price only, which results in a smaller indemnity than a similar RP policy if the price at harvest is higher than the projected price.

Other types of policies, such as Area Risk Protection Insurance (ARPI), provide protection against widespread loss of revenue or widespread loss of yield in a county. Individual farm revenues and yields are not considered under ARPI, and it is possible that your individual farm may experience reduced revenue or reduced yield and not receive an indemnity under ARPI. There are three plans of insurance available under ARPI:

- ▶ Area Revenue Protection
- ▶ Area Revenue Protection with Harvest Price Exclusion
- ▶ Area Yield Protection

ARPI policies are not available in all counties (adapted from FCIC 14-ARPI Area Risk Insurance Policy).

## Actual Production History

For YP, RP, and RP-HPE policies, **actual production history** (APH) refers to a producer's historic yields. APH is used to define the expected yield on the insured unit. The process of establishing APH for a given farm unit is fairly straightforward; however, there are several details to keep in mind.

APH can be established using the simple average of 4 to 10 consecutive years of yield information. Years prior to any missing yield observations cannot be considered in establishing APH—unless there is no yield information because the crop was not planted in a given year. For example, suppose that a farmer planted cotton on the unit in every year from 2003 through 2013. Suppose also that he/she has no yield data for 2010. In this case, only the last 3 consecutive years of data (2011–2013) could be used in establishing APH. Now suppose that the farmer did not plant any cotton in 2010. In that case, years prior to 2010 could be used to establish APH. A zero acreage report would be submitted for the year 2010, and the farm records would be considered continuous even

though there would obviously be no yield data for that year. However, there is a new exception created in the 2014 Farm Bill. If the county yield fell to less than 50 percent of expected yields, a farm may drop the farm yield in that year.

## Transitional Yields

If a producer does not have yield data for 4 years because of missing production records, transition yields (T-yields) can be used to establish an APH for insurance purposes. Each county has a T-yield that is based on historical average county yields. A producer who does not have yield data will be assigned some fraction of the county T-yield. The amount of the T-yield assigned depends on the amount of yield data that is available for the unit. If the producer has no yield data, the assigned yield will be 65 percent of the county T-yield for all 4 missing years. At the other extreme, if the producer has 3 years of data (only one year short of the 4 years required to establish APH), 100 percent of the county T-yield will be assigned for the missing year in calculating the APH. **Table 1** summarizes the calculation of the APH yield for cotton using T-yields in place of missing yield data. In this example, a county T-yield of 750 pounds per acre is assumed.

**Table 1. Establishment of actual production history for a cotton farm using available actual farm unit yield and county T-yields**

|      | Years of actual farm unit yield data available. |            |           |           |           |
|------|---|------------|-----------|-----------|-----------|
|      | 4 years   | 3 years    | 2 years   | 1 year    | 0 years   |
| 2013 | 1,100   | 100% x 750 | 90% x 750 | 80% x 750 | 65% x 750 |
| 2012 | 1,035   | 1,035      | 90% x 750 | 80% x 750 | 65% x 750 |
| 2011 | 825   | 825        | 825       | 80% x 750 | 65% x 750 |
| 2010 | 900   | 900        | 900       | 900       | 65% x 750 |
| APH  | 965   | 878        | 769       | 675       | 488       |

Exceptions are made for new farmers or for a farmer who has never planted the crop to be insured. They are permitted to use 100 percent of the T-yield to establish their APH yield average. Also, a son or daughter who is taking over a farm is allowed to use previous production records from the farm. It should be noted, however, that the APH yield average cannot increase by more than 20 percent when a new yield record is added. Similarly, an APH yield average cannot decrease by more than 10 percent in a given year.

Finally, T-yields are used to provide a floor for a producer's APH yield average. Based on how many years of actual yield data are available, an individual's APH yield average cannot fall below a given level in relationship to the county T-yield. For a producer with records for 1 year, APH yield average will not be less than 70 percent of the county T-yield. The floor for producers with 2 to 4 years of records is 75 percent of the county T-yield, while producers with 4 or more years of records are guaranteed a minimum APH yield average of 80 percent of the county T-yield.

## Establishing a Coverage Level

The product of the farm's APH and the level of coverage selected by the farmer is used in establishing a trigger yield level for a YP policy. Under catastrophic (CAT) insurance coverage, the producer is insured against losses exceeding 50 percent of the APH. So for a cotton farm with an APH of 800 pounds per acre, CAT coverage would pay an indemnity if yields fell below 400 pounds per acre (50% x 800). The indemnity would be paid on the difference between the actual yield and 400 pounds per acre. Producers may elect to insure a higher percentage of their APH—55, 60, 65, 70, 75, 80, or 85 percent of APH yields. Naturally, the higher the level of coverage purchased, the larger the crop insurance premium that will have to be paid.

APH is also used to establish an approved yield when revenue insurance is purchased. This approved yield will be used along with a base price established by USDA's Risk Management Agency (RMA) to determine the farm's guaranteed revenue. The producer can then elect to insure some percentage of that guaranteed revenue (from 50 to 75 percent, but up to 85 percent in select counties). In general, the portion of APH that is not covered is similar to the deductible on other forms of insurance. In other words, if a producer has 75 percent Revenue Protection (RP) coverage, any loss of 25 percent or less is a deductible, which is absorbed by the producer.

Once coverage is decided upon, the producer must pay a premium to the insurance company. This premium is based on the producer's APH yield level, price election, and insurance policy type. Premium rates are then multiplied by the liability to get premium payments due to the insurance company per acre of crop planted.

Common Crop Insurance Policies identify certain specified practices describing the method of production for the crop covered by the policy. The most common practices are irrigated, nonirrigated (dry land), following another crop (FAC), and not following another crop (NFAC). Other practices may be available, and not all insurance policies are available for all practices. Check with a local insurance agent for availability of policies on crops produced using a particular practice.

Once a producer has chosen the type of coverage, APH coverage level, and price election and determined availability based on practice and unit structure, the application for coverage must be submitted by the sales closing date. This date is contained in the special provisions of the crop insurance policy. No changes may be made to a producer's crop insurance coverage, and all appropriate applications must be filed before the sales closing date.

## Other Policy Provisions

All insurance policies except for ARPI cover perils such as prevented planting and replanting. Prevented planting must be due to a cause insured in the purchased policy, and the conditions must be general to

the surrounding areas. The proper equipment must have been ready for use, and late planting must not have been an option. Late planting is considered planting after the initial planting date deadline, but it must be completed before the end of the 25-day late-planting period. During this late-planting period, acres planted are covered at less than the selected coverage level. For each day that the crop is planted late, a 1 percent deduction in coverage level is assigned. After the 25-day late-planting period, special provisions are in place containing details of insurance coverage.

Replanting payments may be received for the producer’s actual cost of replanting if a minimum of 20 acres or 20 percent of the insured planted acreage must be replanted. No replanting payments will be made if the acreage was planted before the earliest planting date, if one replanting payment has already been received for the crop year, if appraisals establish that production will exceed the level set by the crop provisions, or if it is not practical to replant.

## Unit Structure

The term unit or insurance unit refers to a parcel of land that is insured separately from other parcels. An individual farm may be divided into several units defined by ownership or lease arrangements, management practices, or location. Four alternative unit structures are available for crop insurance. However, all four alternatives are not necessarily available for all policies.

### Basic Units

All owned or cash-leased land planted to the same crop and located in the same county comprises a basic unit. Share-leased acreage planted to the crop is treated as a separate basic unit. If a farmer share-rents from multiple landlords, land leased from each landowner will receive a separate basic unit. Production records must be kept separately on each basic unit. Producers receive a 10 percent discount on their crop insurance premium if the acreage is insured as basic units.

### Optional Units

If different parcels within a basic unit are managed in a significantly different manner, that basic unit can be divided into separate optional units. For example, all of the cotton acreage on a farm owned by a producer would represent a basic unit. However, if two-thirds of the acreage was irrigated and one-third was not, the basic unit could be divided into two optional units based on that fact. In addition, segments of a basic unit that are located in different legal sections can be divided into optional units. As with basic units, separate records would need to be kept for each optional unit.

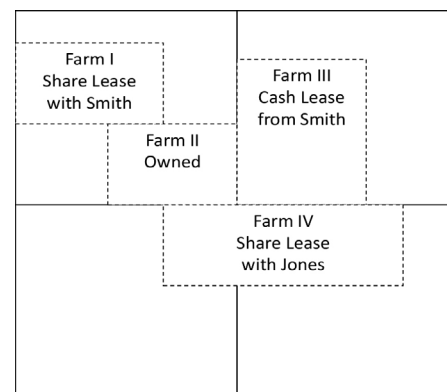
## Enterprise Units

It is also possible to combine basic units into larger parcels. An enterprise unit consists of all of the producer’s acreage of an insured crop in a given county, regardless of whether it is owned, cash-leased, or share-leased and regardless of how many landlords may be involved. For cotton, the minimum allowable size for an enterprise unit is 50 acres. Since an enterprise unit is larger than a basic unit, the possibility of average yield being low enough to result in an insurance claim is reduced; therefore, additional discounts on insurance premiums are available for insuring all cotton acreage as an enterprise unit. The size of the discount will depend on the size of the enterprise unit, with larger units receiving a larger discount.

## Whole Farm Units

For some crops, a producer may be able to insure all acreage of all crops as a single whole farm unit (WFU). Again, because the likelihood of having a claim is reduced by the larger unit, a discount on the insurance premium may be available. The WFU must contain all of the insurable acreage of at least two crops. At least two of the insured crops must each have planted acreage that constitutes 10 percent or more of the total planted acreage liability of all insured crops in the WFU. A WFU will be available for RP policies unless limited by the **special provisions**. A WFU will be available for other plans of insurance only if provided for in the special provisions (Common Crop Insurance Policy 11-BR).

The diagram in **Figure 1** illustrates the determination of the various unit structures discussed here (Edwards, 1999). Farm I and Farm IV would each represent separate basic units because they are operated under share leases with different landlords. Farms II and III could be combined into a single basic unit if they are in the same county, because those farms are owned and cash-leased. If they are in different counties, they would remain separate basic units. All of the cotton acreage on all four farms could be combined into an enterprise unit, assuming all are in the same county.



**Figure 1. Determination of insurable units.**

If cotton acreage on Farm II is irrigated while cotton acreage on Farm III is nonirrigated, Farms II and III could be divided into separate optional units. In addition, the Agricultural Act of 2014 provides for the creation of separate enterprise units for irrigated and nonirrigated cotton.

## Shallow Loss Programs

The Agricultural Act of 2014 allows a producer to layer two insurance policies on the same acre of a crop. This layering allows for individual coverage (YP, RP, RP-PHE) for deep losses and either **supplemental coverage option (SCO)** or **stacked income protection (STAX)**. SCO is available for most program crops, while STAX is only available for cotton. Both SCO and STAX are triggered by county yields rather than farm yields, and both function similarly to area revenue insurance products. The key difference is that SCO and STAX are restricted to cover only shallow losses. In effect, they can cover a portion of the deductible not covered by the individual coverage policy.

SCO provides an indemnity payment when market revenue measured at the county level falls below 86 percent of the expected county revenue as determined from county yield histories and futures prices. The payment size is determined by the proportion of the range of the loss below 86 percent down to the nominal coverage level of the producer's farm-level crop insurance. A producer pays 35 percent of the actuarially fair premium (65 percent subsidy).

STAX is similar in structure to SCO in that indemnities would be based on actual revenue relative to expected revenue at the county level.

The top coverage for STAX is 90 percent, rather than 86 percent. The coverage range is limited to be from 90 percent of expected county revenue down to 70 percent of expected county revenue in 5 percent increments. The use of a multiplier allows a producer to increase the amount of insurance by up to 120 percent of expected county revenue. Further, the subsidy rate for STAX is 80 percent for all coverage levels, and the producer is not required to buy the underlying individual coverage policy.

## Subsidies

Often, the term subsidy is used in conjunction with crop insurance premiums. A subsidy on a premium is simply the portion of the total premium that is paid for by the government. For example, if a premium is 100 percent subsidized, the producer pays no premium for the

coverage. If a premium is 50 percent subsidized, then the producer pays 50 percent of the total premium. Note that premium tables are calculated including subsidies so that producer premium rates are already adjusted by the appropriate subsidy.

**Table 2** shows the subsidy percentages available in 2014 and beyond. Note that subsidy percentages depend on unit structure and product. In general, the subsidy percentage drops for higher coverage and is higher for enterprise units and for STAX.

**Table 2. Subsidy levels for alternative unit structures and products.**

| Coverage level % | Basic & optional subsidy % | Enterprise unit subsidy % | SCO subsidy % | STAX subsidy % |
|------------------|----------------------------|---------------------------|---------------|----------------|
| 50               | 67                         | 80                        | 65            | n/a            |
| 55               | 64                         | 80                        | 65            | n/a            |
| 60               | 64                         | 80                        | 65            | n/a            |
| 65               | 59                         | 80                        | 65            | n/a            |
| 70               | 59                         | 80                        | 65            | 80             |
| 75               | 55                         | 77                        | 65            | 80             |
| 80               | 48                         | 68                        | 65            | 80             |
| 85               | 38                         | 53                        | 65            | 80             |
| 86               | n/a                        | n/a                       | 65            | 80             |
| 90               | n/a                        | n/a                       | n/a           | 80             |

## Summary

Crop insurance has become a more important component of a producer's risk management program as a result of the passage of the Agricultural Act of 2014. Specific information on important items for your area, such as sales closing dates, reporting dates, types of policies available, and rate structures, are available from the USDA Risk Management Agency at <https://www.rma.usda.gov/> or from your crop insurance agent.

## Reference

Edwards, W. 1999. Actual Production History and Insurance Units for Multiple Peril Crop Insurance. Iowa State University Extension. FM-1860.

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