

Summary of Crop Insurance Programs Available to Arkansas Crop Producers

Vuko Karov, Eric J. Wailes, and K. Bradley Watkins¹

University of Arkansas Division of Agriculture

Department of Agricultural Economics & Agribusiness 2012

Introduction

Crop insurance programs are key risk management tools for U.S. crop producers. Such programs provide risk protection against low yields and/or market prices. These programs are administered by the U.S. Department of Agriculture's Risk Management Agency (USDA/RMA). The producer-paid crop insurance premiums are subsidized by the Federal Crop Insurance Corporation (FCIC). This brief summarizes the eight crop insurance programs currently available to Arkansas crop farmers. As Table 1 illustrates, five of these programs provide coverage at the individual (farm)-level, while three provide area (county)-level coverage.

Table 1: Overview of Crop Insurance Programs

Program	Abbreviation	Coverage Level
Yield Protection	YP	Individual
Revenue Protection	RP	Individual
Revenue Protection with Harvest Price Exclusion	RP-HPE	Individual
Catastrophic Insurance	CAT	Individual
Supplemental Coverage	SC	Individual
Group Risk Plan	GRP	County
Group Risk Income Protection	GRIP	County
Group Risk Income Protection with Harvest Price Option	GRIP-HPO	County

Source: Edwards, 2011a

Yield Protection (YP) Program

Yield losses can potentially affect only specific crop farmers in any given crop year and geographic location. At the same time, neighboring producers may (or may not) experience record crop yields. As a result, the risk of yield losses is known to be inherently random.

The YP program provides risk protection against yield losses caused by factors such as drought, floods, frost and pest invasion. Program protection is determined based on the yield and price coverage levels selected by the farmer. The producer-specific insurance yield is determined based on the Actual Production History (APH). APH is calculated as the average yield of the insured crop during the past four to ten consecutive crop years.^{2,3} Most crops can be insured

¹ The authors are: Program Associate, L.C. Carter Endowed Chair and Distinguished Professor of Agricultural Economics, and Associate Professor of Agricultural Economics and Extension Economist at the Department of Agricultural Economics and Agribusiness - University of Arkansas (Fayetteville), respectively. We gratefully acknowledge the funding for this research provided by the Arkansas Rice Research and Promotion Board.

² In cases where yield data are available for less than four years, Transitional (T) Yields can be used as a substitution for each year of missing data. T Yields are based on historical ten-year county average yields (Edwards, 2012b).

from 50 to 85 percent of the APH yield in five percentage point increments. The yield guarantee (by crop, by farm, and by year) is calculated as:

$$\text{Yield Guarantee} = \text{APH Yield} * \text{Yield Coverage Level}$$

The YP Indemnity Price, on the other hand, is determined as the average of the daily futures crop market prices of the pre-sales closing month, and is referred to as the projected price. Table 2 shows price discovery periods for projected and harvest prices, contract months and the exchanges where such contracts are traded for the five most important crops in Arkansas. The typical price coverage level selected is 100 percent, even though such coverage can vary from 60 to 100 percent.

Table 2: Commodity Exchanges, Contract Months, and Price Discovery Periods (by Crop)

Crop	Commodity Exchange	Contract Month	Projected Price Discovery Period	Harvest Price Discovery Period
Rice	Chicago Board of Trade	November	January 15-February 14	September 1-September 30
Cotton	IntercontinentalExchange	December	January 15-February 14	October 1-October 31
Soybeans	Chicago Board of Trade	November	January 15-February 14	October 1-October 31
Corn	Chicago Board of Trade	December	January 15-February 14	August 15-September 14
Wheat	Chicago Board of Trade	July	August 15-September 14	June 1-June 30

Source: USDA/RMA, 2011

Crop insurance indemnity payments are taxable income. Indemnities are received when the producer's actual average yield is lower than the yield guarantee, and are calculated as:

$$\text{Total Indemnities} = (\text{Yield Guarantee} - \text{Actual Average Yield}) * \text{Projected Price} * \text{Acres Insured}$$

Per acre farmer-paid premium costs, on the other hand, are calculated as:

$$\text{Premium} = \text{APH Yield} * \text{Yield Coverage Level} * \text{Projected Price} * \text{Premium Rate} * \text{Subsidy Factor}^4$$

The premium rate (expressed as a percentage) is program, year, crop and county-specific, and in a given year is determined by factors such as total indemnities received and total protection purchased by farmers in previous years (Barnett and Coble, 1999). Since the RP program allows for a greater overall risk protection than the YP program, RP Premium Rates are higher than corresponding YP Premium Rates. In addition, higher yield coverage levels are associated with higher premium rates. The Subsidy Factor, on the other hand, is expressed as a percentage rate illustrating the farmer-paid share of the premium (Edwards, 2011b).

³ Due to technological advances reflected in rapid yield increases in more recent years, farms using ten years of data to determine their APH yields can in some instances be penalized relative to producers using fewer years of data. To address this concern, APH yields can be trend-adjusted by using crop and county-specific yield trend factors (Edwards, 2012a).

⁴ A premium cost estimator is available on the RMA's website at:
<http://ewebapp.rma.usda.gov/apps/costestimator/>

Crop insurance policies are purchased for so-called Insurance Units: land parcels that are insured separately of other parcels of land. Four Insurance Unit categories can be identified: Base, Optional, Enterprise and Whole Farm Units.

- **Base Units** are available as follows: one Basic Unit can be received for each parcel of land for which rent is shared with another producer, and a separate single Basic Unit can be received for the combined land that is owned and cash rented.
- **Optional Units** are typically available in cases when different production practices are used to farm acres of the same crop (e.g., irrigated vs. dryland soybeans) or in cases when different farms that are owned or cash lease rented are located in different township sections.
- **Enterprise Units** are only available for the YP, RP and RP-HPE programs. In this case, acres of a single crop planted within a given county in which the producer has an interest are bundled into a single Insurance Unit. This is the case even though multiple owners may be involved and whether or not such acres are rented or owned. In an Enterprise Unit, at least two Basic Units must be combined.
- **Whole Farm Units** are only available for the RP and RP-HPE programs in cases when the producer wants to combine acres of different crops (e.g., rice and soybeans) in a single Insurance Unit. This category comes with a premium discount, with the greatest discount being received in cases when acres of different crops are planted in equal number.

The government and farmer-paid shares of the premiums directly correspond to the Insurance Unit type selected (Edwards, 2012b). Tables 3 and 4 illustrate the government and farmer shares of premiums paid, respectively. Government shares of premiums paid are high at lower coverage levels selected. In the case of Enterprise Units for example, the government subsidy is 80 percent of the premium paid for the 50 through 70 percent coverage levels, but only 53 percent at the highest possible coverage level (85 percent).

Table 3: Government Share of Premium Paid, by Coverage Level and Unit Type

Coverage Level	Whole Farm Units	Enterprise Units	Basic Units	Optional Units
50%	80%	80%	67%	67%
55%	80%	80%	64%	64%
60%	80%	80%	64%	64%
65%	80%	80%	59%	59%
70%	80%	80%	59%	59%
75%	80%	77%	55%	55%
80%	71%	68%	48%	48%
85%	56%	53%	38%	38%

Source: Edwards, 2012b

Table 4: Farmer Share of Premium Paid, by Coverage Level and Unit Type

Coverage Level	Whole Farm Units	Enterprise Units	Basic Units	Optional Units
50%	20%	20%	33%	33%
55%	20%	20%	36%	36%
60%	20%	20%	36%	36%
65%	20%	20%	41%	41%
70%	20%	20%	41%	41%
75%	20%	23%	45%	45%
80%	29%	32%	52%	52%
85%	44%	47%	62%	62%

Source: Edwards, 2012b

Example:

Assuming a 70 percent coverage level YP crop insurance policy for long-grain rice purchased for Enterprise Units, with APH yield of 70 cwt/acre, a projected price of \$13/cwt, and a premium rate of 3%, the per acre farmer-paid premium cost is calculated as:

$$70 \text{ cwt/acre} * 70\% * \$13.00/\text{cwt} * 3\% * 20\% = \mathbf{\$3.80}$$

Revenue Protection (RP) Program

The risk of low crop market prices, unlike the crop yield loss risk, is a systemic risk since it affects all producers equally due to the fact that farmers are price takers.

The RP program provides risk protection against low crop revenue which may occur in cases of an unfavorable combination of yields and/or market prices. Therefore, the program grants a revenue guarantee by providing a simultaneous protection against low crop yields and prices.

The yield coverage level is determined as under the YP program and is based on the farm-specific APH for the crop of interest. The price coverage level, on the other hand, is determined

based on futures market prices. A projected price and a harvest price are obtained to calculate the revenue guarantee as:

$$\text{Revenue Guarantee} = (\text{Higher of Projected and Harvest Price}) * \text{APH Yield} * \text{Yield Coverage Level}$$

The Actual Revenue, on the other hand, is calculated as:

$$\text{Actual Revenue} = \text{Actual Yield} * \text{Harvest Price}$$

For a given year-crop combination, the total indemnities received are calculated as:

$$\text{Total Indemnities} = (\text{Revenue Guarantee} - \text{Actual Revenue}) * \text{Acres Insured}$$

Under the program, the harvest price cannot be more than twice as high as the projected price (Edwards, 2011c).

Revenue Protection with Harvest Price Exclusion (RP-HPE) Program

The RP-HPE is an alternative revenue protection program. It differs from the RP program since the revenue guarantee is calculated exclusively based on the projected price. This means that even if the harvest price is higher than the projected price, the revenue guarantee will not increase and will stay fixed at the lower value. As a result, RP-HPE premiums are lower than RP premiums since they provide lower risk protection against low crop prices (Edwards, 2011c).

Catastrophic Insurance (CAT)

CAT is a most fundamental (minimum-coverage) yield or revenue-protection policy. Producers choosing this option insure 50 percent of the APH Yield and 55 percent of the Indemnity Price. CAT has no premium payment requirement. However, in order to participate, farmers must pay an administrative processing fee of \$300 per insured crop in each county (Edwards, 2011a).

Supplemental Coverage (SC)

As an addition to the traditional YP crop insurance policy, different SC programs are also available for purchase by farmers. Such programs are typically constructed and marketed by private crop insurance companies and provide risk protection against disasters including hail, fire and wind (Edwards, 2011a).

Group Risk Plan (GRP) Program

The GRP program provides county-level coverage based on Enterprise Units only. Indemnity payments are received when the Average County Yield (ACY) is below the selected trigger level that can vary from 70 to 90 percent of the long-term Expected County Yield. Price coverage, on the other hand, is selected as a dollar value of coverage per acre with the RMA determining the maximum possible level for selection on an annual basis (Edwards, 2011a).

Group Risk Income Protection (GRIP) Program

The GRIP program provides county-level gross revenue coverage based on Enterprise Units only. The revenue guarantee level is calculated as a product of the Expected County Yield and

the projected price. The yield coverage levels, as under the GRP program, can vary from 70 to 90 percent of the long-term Expected County Yield. The actual revenue is calculated as a product of the Actual County Yield and the harvest price. The price coverage selected can vary from 90 to 150 percent of the product between the Expected County Yield and the projected price (Edwards, 2011a; Edwards, 2011d).

Group Risk Income Protection with Harvest Price Option (GRIP-HPO) Program

The GRIP program is also available with a Harvest Price Option (GRIP-HPO). In this case, the revenue guarantee is calculated using the higher of the projected price and the harvest price. Since the GRIP-HPO provides for a better price risk coverage than the regular GRIP policy, premiums for GRIP-HPO are higher. Overall, the GRP, GRIP and GRIP-HPO programs have lower premiums than the programs providing individual (farm)-level coverage (Edwards, 2011a; Edwards, 2011d).

Crop Insurance Dates

Tables 5 and 6 illustrate crop insurance-related dates for the five most important row crops in Arkansas for the 2012 crop year. Table 5 shows rice, soybeans and wheat data for Arkansas County while Table 6 illustrates cotton and corn data for Desha County. The billing date was 8/15/2012 for all crops excluding wheat (7/1/2012). The sales closing date, on the other hand, was 2/28/2012 for all crops except wheat (9/30/2011). The final planting dates were as follows: 5/25/2012 (rice and cotton); 11/30/2011 (wheat); 4/25/2012 (corn); 6/15/2012 or 6/25/2012 (soybeans-depending on crop practice). The acreage reporting date for all crops was 7/15/2012 except for wheat (12/15/2011). The end of insurance date was as follows: 10/31/2012 (rice); 12/10/2012 (soybeans); 7/31/2012 (wheat); 12/31/2012 (cotton); and 12/10/2012 (corn). The cancellation dates were equal as the sales closing dates. Finally, the termination date for all crops was 2/28/2013 except wheat (9/30/2012).

References

- Barnett, B. J., and K. H. Coble. 1999. "Understanding Crop Insurance Principles: A Primer for Farm Leaders." Office of Agricultural Communications, Division of Agriculture, Forestry, and Veterinary Medicine, Mississippi State University.
- Edwards. 2012a. "Trend-Adjusted Actual Production History (APH)." Iowa State University Extension and Outreach. Available online at: <http://www.extension.iastate.edu/agdm/crops/html/a1-56.html>
- Edwards. 2012b. "Proven Yields and Insurance Units for Crop Insurance." Iowa State University Extension and Outreach. Available online at: <http://www.extension.iastate.edu/agdm/crops/html/a1-55.html>
- Edwards. 2011a. "Managing Risk with Crop Insurance." Iowa State University Extension and Outreach. Available online at: <http://www.extension.iastate.edu/agdm/crops/html/a1-48.html>
- Edwards. 2011b. "Yield Protection Crop Insurance." Iowa State University Extension and Outreach. Available online at: <http://www.extension.iastate.edu/agdm/crops/html/a1-52.html>
- Edwards. 2011c. "Revenue Protection Crop Insurance." Iowa State University Extension and Outreach. Available online at: <http://www.extension.iastate.edu/agdm/crops/html/a1-54.html>
- Edwards. 2011d. "Group Risk Plan (GRP) and Group Risk Income Protection (GRIP)." Iowa State University Extension and Outreach. Available online at: <http://www.extension.iastate.edu/agdm/crops/html/a1-58.html>
- U.S. Department of Agriculture. Risk Management Agency. 2012. Dates Inquiry Selection. Available online at: <http://www3.rma.usda.gov/apps/dateinq/menu.cfm>
- U.S. Department of Agriculture. Risk Management Agency. 2011. Available online at: <http://www.rma.usda.gov/>

Table 5: 2012 Crop Insurance-Related Dates for Arkansas County, AR (Rice, Soybeans and Wheat)

Date	Crop Year	State	County	Rice	Soybeans	Wheat
Billing Date	2012	Arkansas	Arkansas	8/15/2012	8/15/2012	7/1/2012
Sales Closing Date	2012	Arkansas	Arkansas	2/28/2012	2/28/2012	9/30/2011
Final Planting Date	2012	Arkansas	Arkansas	5/25/2012	6/15/2012 (6/25/2012)	11/30/2011
Acreage Reporting Date	2012	Arkansas	Arkansas	7/15/2012	7/15/2012	12/15/2011
End of Insurance Date	2012	Arkansas	Arkansas	10/31/2012	12/10/2012	7/31/2012
Cancellation Date	2012	Arkansas	Arkansas	2/28/2012	2/28/2012	9/30/2011
Termination Date	2012	Arkansas	Arkansas	2/28/2013	2/28/2013	9/30/2012

Source: RMA, 2012

Table 6: 2012 Crop Insurance-Related Dates for Desha County, AR (Cotton and Corn)

Date	Crop Year	State	County	Cotton	Corn
Billing Date	2012	Arkansas	Desha	8/15/2012	8/15/2012
Sales Closing Date	2012	Arkansas	Desha	2/28/2012	2/28/2012
Final Planting Date	2012	Arkansas	Desha	5/25/2012	4/25/2012
Acreage Reporting Date	2012	Arkansas	Desha	7/15/2012	7/15/2012
End of Insurance Date	2012	Arkansas	Desha	12/31/2012	12/10/2012
Cancellation Date	2012	Arkansas	Desha	2/28/2012	2/28/2012
Termination Date	2012	Arkansas	Desha	2/28/2013	2/28/2013

Source: RMA, 2012