Fundamentals of Crop Insurance

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In 1938 the Federal Crop Insurance Corporation was created which in turn created Multi Peril Crop Insurance (MPCI). The purpose of the FCIC was to promote the national welfare by improving the economic stability of agriculture through a sound system of crop insurance and providing the means for the research and experience helpful in devising and establishing insurance. At this time it was only sold by the government and was very experimental. Federal MPCI provided coverage to the producer for a number of naturally occurring perils like drought, floods, and freezing temperatures. Policies were mainly geared toward the loss of production and most policies still cover this today.

In 1996 the FAIR Act was passed which required producers to either purchase crop insurance or sign waiver eliminating their eligibility for disaster benefits that could become available during the crop year.

The RMA was created to administer FCIC programs and education. In 1998 AIPs, not the government, have been the providers of MPCI. There are currently 18 AIPs authorized to sell and provide service to crop insurance. The government is in control of policies, rules, and regulations. The government also subsidizes a large portion of premiums depending on the elected coverage level on the crop insurance policy. The FCIC establishes set insurance premium rates which are the same for all AIPs.

The crop insurance contract is the policy between the producer and one of the 18 AIPs. Most policies automatically renew at the end of every insurance period (generally harvest).
Coverage is chosen on county by county and crop by crop basis and in return the AIP agrees to indemnify the insured against any loss that occurs during the insured crop year. However, loss must be due to unavoidable circumstances outside of the producer’s control and not do to poor farming practices.

ITS – if you fail to pay the fees/premiums for any crop in any county then you are placed on the ITS for a year and cannot receive any assistance in that crop year. Also cannot sign up for the year following if producer has not been reinstated (set up payment plans to cover past due premiums and fees).
High-Risk Alternate Coverage Endorsement (HR-ACE) is a privately developed product which allows the producer who farms both high-risk and non-high-risk land to insure the high-risk land at an additional coverage level which is lower than the coverage level on the non-high-risk land. Available for corn, wheat, soybeans, and grain sorghum in certain counties.
Yield protection is similar to APH plan but it is available on crops that are eligible for revenue production plans. The insured’s average production is multiplied by the level of coverage chosen to establish the guarantee. The YP price is determined by averaging the daily price on a commodity exchange during the price discovery period. The projected price plan is used to calculate the guarantee and indemnity payment for this plan.

Revenue protection was released in 2010 for the upcoming 2011 crop year. The RP plan provides the yield protection of YP but adds revenue protection. A loss occurs when the productions level falls below the guaranteed production level OR the revenue level falls below the revenue guarantee. The revenue projected price is calculated using the same price discovery period as YP. The initial guarantee for RP is calculated by multiplying the guaranteed production by the projected price. Harvest price is the additional pricing period near the time of harvest for the crop. If the harvest price is greater than the projected price, the revenue guarantee is increased but the insured is not charged additional premium for the increase.
Individual plans are based upon only the insured’s production and/or revenue history.

**Plans of Multi Peril Crop Insurance**

**Individual Plans**
- Yield Protection
- Revenue Protection
- Revenue Protection-Harvest Price Exclusion

**Area Plans**
- Yield Protection
- Revenue Protection
- Revenue Protection-Harvest Price Exclusion
APH is calculated by multiplying the average production by the level of coverage elected by the share in the crop. A loss occurs when production level falls below the guaranteed production level. *if due to an insurable cause – it is very important to know what insurable causes are to avoid issues at time of adjustment

ARH is calculated based upon the insured’s production and revenue history.

CAT coverage is catastrophic coverage and is the lowest amount of insurance available and is a yield only plan. For individual CAT coverage, producers are compensated for losses exceeding 50% of an average yield and paid at 55% of the established price for the crop during the crop year. For area plans, producers are compensated at 65% of the area’s (typically county) yield and paid at 45% of the established price. Premiums for CAT coverage is 100% subsidized but producers pay the $300 per crop and county administrative fee. Anything above CAT is considered a buy up and charged a $30 fee per crop and county.
When area risk protection insurance is elected, all acreage of the insured crop in the county must be insured under the same plan of insurance.

AYP provides protection against loss of yield due to a county level production loss.

ARP provides protection against loss of revenue due to a county level production loss, a price decline, or a combination of both.
It is an administrative plan for RMA to apply when basic policies are not available for specified crops.
Decisions for Plans of Multi Peril Crop Insurance

- Yield Protection or Revenue Protection
- Individual Coverage or Area Coverage
- Coverage Level
- Buy-ups or Supplemental Coverage
Base Price: established during price discovery period by RMA
Harvest Price: additional pricing period close to harvest established by RMA
In this case, the insured has a yield guarantee coverage of 36bu/ac. Anything falling below this level will trigger an indemnity payment to the insured.
Yield Protection provides one layer of protection, yield loss.

In this case the producer’s actual yield was 30bu/ac which was 6bu/ac less than the minimum yield guarantee. This would trigger the indemnity payment of $57.72/ac
Base Price $9.62 \times 36 \text{ bu/ac} = \text{minimum revenue guarantee} $346.32/ac

Since harvest price is below the base price, there is no upward revision for harvest price.

Actual Revenue: $8.91 \times 36\text{ bu/ac}$

Indemnity (payment to insured) the difference between the minimum revenue guarantee and the individual's actual revenue: $346.32 - 267.30 = 79.02/ac$
Harvest Price Exclusion works the same as before due to prices being lower than the base price during the harvest price discovery period. However, had prices during harvest been higher than the base price HPE would exclude the insured from being able to capture this upswing in price. (Generally in return for lower policy costs)
The projected price and harvest price discovery periods are listed above. The actual prices are generally released the next day, however can be delayed due to the trading activity within these discovery periods.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Contract Month</th>
<th>Projected Price Dates</th>
<th>Harvest Price Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Beginning</td>
<td>End</td>
</tr>
<tr>
<td>Corn</td>
<td>DEC</td>
<td>13-Jan</td>
<td>14-Feb</td>
</tr>
<tr>
<td>Cotton</td>
<td>DEC</td>
<td>15-Jan</td>
<td>14-Feb</td>
</tr>
<tr>
<td>G Sorghum</td>
<td>DEC</td>
<td>15-Jan</td>
<td>14-Feb</td>
</tr>
<tr>
<td>Rice</td>
<td>NOV</td>
<td>15-Jan</td>
<td>14-Feb</td>
</tr>
<tr>
<td>Soybean</td>
<td>NOV</td>
<td>15-Jan</td>
<td>14-Feb</td>
</tr>
<tr>
<td>Wheat</td>
<td>JLY</td>
<td>15-Aug</td>
<td>14-Sep</td>
</tr>
</tbody>
</table>
| Peanut     |                | Peanuts are not traded on the commodity exchange, therefore a peanut formula price is determined and used by RMA.
Base Price: established during price discovery period by RMA
Harvest Price: “what if scenario” – just to show if harvest price had been above base price
In this case, the insured has a yield guarantee coverage of 53.55bu/ac. Anything falling below this level will trigger an indemnity payment to the insured. The only difference between Example 1 and 2 are the harvest prices. Example 2 shows a harvest price above the base price.
Yield Protection provides one layer of protection, yield loss. This does not provide a revenue guarantee so a change in harvest price does not have an effect on yield protection. Therefore Example 2 has the same indemnity as Example 1.

In this case the producer’s actual yield was 30bu/ac which was 6bu/ac less than the minimum yield guarantee. This would trigger the indemnity payment of $57.72/ac.
Base Price $9.62 * Yield Guarantee 36bu/ac = minimum revenue guarantee $346.32/ac
Harvest Price Revision: Harvest Price ($10.50)* 36bu guarantee = $378/ac
Actual Revenue: $10.50 * 36bu/ac = $315

Indemnity (payment to insured) the difference between the minimum revenue guarantee and the individual’s actual revenue: $378-$315 = $63/ac
With Harvest Price Exclusion, in a scenario such as this (Harvest price is greater than the base price) there would be no upward revision in harvest price as in the previous slide’s example. In the previous slide, you will see that to figure the indemnity payment we took the greater of the minimum revenue guarantee or the harvest price revision. The harvest price exclusion indemnity pays out only based on the minimum revenue guarantee in exchange for often a slightly lower premium.

Indemnity = $346.32 - $315 = $31.32/ac
## Compare RP and RP-HPE

<table>
<thead>
<tr>
<th>Insurance Elected</th>
<th>RP</th>
<th>RP-HPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Price</td>
<td>$9.62</td>
<td>$9.62</td>
</tr>
<tr>
<td>Harvest Price</td>
<td>$10.50</td>
<td>$10.50</td>
</tr>
<tr>
<td>APH</td>
<td>48 bu.</td>
<td>48 bu.</td>
</tr>
<tr>
<td>Coverage Level</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>Actual Yield</td>
<td>30 bu.</td>
<td>30 bu.</td>
</tr>
<tr>
<td>Yield Guarantee</td>
<td>36 bu.</td>
<td>36 bu.</td>
</tr>
<tr>
<td>Actual Revenue</td>
<td>$315.00</td>
<td>$315.00</td>
</tr>
<tr>
<td>Revenue Guarantee</td>
<td>$346.32</td>
<td>$346.32</td>
</tr>
<tr>
<td>Harvest Price Applied</td>
<td>$10.50</td>
<td>$9.62</td>
</tr>
<tr>
<td>Revised Revenue Guarantee</td>
<td>$378.00</td>
<td>NA</td>
</tr>
<tr>
<td>Indemnity</td>
<td>$63.00</td>
<td>$31.32</td>
</tr>
</tbody>
</table>

Harvest Price Exclusion feature is only applied when harvest price is greater than base price.

For harvest price less than base price, indemnities are identical for RP and RP-HPE.
Example of area yield protection plan.
In this case, a county yield of 45.05 bu/ac or less will trigger an indemnity payment. All indemnity payments in area crop insurance policies contain a loss limit factor.
Example of area revenue protection plan. Payment factor and coverage level are options to be chosen by the producer when purchasing area crop insurance. Loss limit factor is 0.18 unless otherwise stated in the crop insurance policy.

Revenue protection plans provide two levels of coverage. In the area plan this includes the county yield trigger and the county revenue trigger. For the yield plan only the county yield trigger applies.
Area Revenue Protection Example

Expected County Yield
* Base Price
* Loss Limit Factor
53 bu/ae * $9.62/bu * 0.18

Harvest Price
* Actual Yield
$8.91/bu * 40 bu/ae

Minimum Protection
* Payment Factor
(53 bu * $9.62/bu * 100%) * (0.2254)

Limiting Revenue Factor: $91.77/ae
Maximum Loss Payment: $341.61/ae

County Revenue Trigger
- Limiting Revenue Factor
= $433.38 - $91.77

(County Revenue Trigger
- Actual County Revenue) / Maximum Loss Payment
= ($433.38 - $356.40) / $341.61

Actual County Revenue: $356.40/ae
Payment Factor: 22.54%

Indemnity: $114.90/ae
Area Plans

- Area plans are available for revenue protection with harvest price exclusion.
- Calculations with yield and price adjustments would follow similarly to examples for individual plans.
A tool used was the crop insurance indemnity calculator. This example calculates the indemnity payment under the revenue protection plan. Here you can enter in your farms APH, actual yields, and select the policy coverage best suited for your situation (white cells). The calculator then produces the indemnity values (blue cells). In use with the budget summaries available also on the website can help insureds determine what policies will provide enough coverage to for their expenses.

Indemnity Calculator for revenue protection. Note the minimum revenue guarantee: this individual is guaranteed a revenue of $346.32/acre.
For the 2016 budgets, the net operating expense for soybeans were $356.52 and the total specified expenses were $444.51. The indemnity calculator for Example 1 would only guarantee $346.32 bu/ac which does not cover the net operating expense for furrow irrigated soybeans.
The indemnity calculator can help you determine the coverage needed in order to cover the expenses you wish. A change from the 75% coverage level to 80% gives this individual coverage over their net operating expenses, but leave the farm’s fixed costs uncovered. The minimum revenue guarantee is $369.41 which covers the $356.52 net operating expenses for surface irrigated soybeans. This will obviously vary by farm, but using these tools can allow you to figure out what’s best for your personal operation.
Prevented planting is the failure to plant an insured crop by the final planting date or during the late planting period.
You must be prevented from planting by an insured cause of loss that is general to the surrounding area and that prevents other producers from planting acreage with similar characteristics.

Prevented planting guarantee for most crops is 60% of the production guarantee for timely planted acreage (65 or 70 percent if available and chosen by the sales closing date unless a cause of loss that could or would prevent planting is evident when your application for increased coverage is completed). IE hurricane nemo is expected to make landfall in the next 48 hours and bring 30 inches of rain to your area. You simply cannot apply for increased coverage in those 48 hours leading up to the event.

If you are prevented from planting your acreage, you are required to provide a notice that you were prevented from planting an insured crop within 72 hours after: the final planting date, if you do not intend to plant the insured crop during the late planting period or if a late planting period is not available; or you determine you will not be able to plant the insured crop within an available late planting period.

On existing policies, you are eligible for prevented planting payments if the insured cause of
loss occurred after the sales closing date for the previous crop year and all other requirements for prevented planting have been met.

On new policies, you are eligible for prevented planting payments if the insured cause of loss occurred after the sales closing date for the current crop year and all other requirements for prevented planting have been met.

Ex: Flood occurs on Feb. 1 and prevents planting for months – only existing policies would provide prevented planting coverage due to the sales closing date of February 28th; however, any floods occurring after February 28th of the current crop year would be covered by both existing and new policies.
You should base your decision whether or not to plant on agronomically sound and well-documented drought management practices. You may choose to: plant fewer irrigated acres based on the amount of adequate irrigation water available; plant and report the acreage without adequate water as non-irrigated, if a non-irrigated practice is available for the crop in your county; not plant the acreage if adequate water is not available and claim a prevented planting payment; or plant and report the acreage as uninsurable if a non-irrigated practice is not available for the crop in the county.

**Keep good records**
Prevented planting coverage is available for most crops and covers floods, hurricanes, or excess precipitation that occurs during the insurance period and prevents other producers from planting acreage with similar characteristics. Prevented planting is also available if you are unable to plant because of residual salt in the soil or irrigation water supply because of an insured cause of loss (such as hurricane or flood), as long as the event occurred during the prevented planting insurance period.

**Keep good records**
The late planting period is generally 25 days after the final planting date but varies by crop and area. See your policy or talk to your crop insurance agent for more information. For most crops, the timely planted, production guarantee is reduced one percent per day for each day planting is delayed after the final planting date.

If you plant a cover crop you cannot hay or graze this cover crop before November 1, otherwise harvest it at any time. If you hay or graze it before November 1, you will not receive a prevented planting payment for your first crop.

Planting a second crop after the late planting period (if you are also prevented from planting through the late planting period). You can also plant after the final planting date if no late planting period is available. You may receive a prevented planting payment equal to 35% of the prevented planting guarantee.
Replant Guidelines

• The same agricultural commodity which was first insured on the acreage must be the same commodity which is replanted.

• When a crop is damaged (>90% of production guarantee) and practical to replant, the crop must be replanted to maintain insurance coverage.

• Must notify when the insured wants to destroy the acreage of the initially planted crop and replant it.

• The acreage being replanted must consist of at least 20 acres or 20% of the whole farm unit to qualify for a replant payment.

• Switching from one crop to another is not replanting and should be submitted as a harvest loss.

• The insured must receive consent from an adjuster prior to destruction and replanting.

• Early planting date: anything planted before this date is not eligible for replant coverage. For soybeans in Mississippi Co this is April 16th.

• Ex: Your soybean crop was hit with a monsoon (23 inches and falling) and is expected to only yield 19bu/ac. You decide it would be advantageous for you to replant the acreage. Your APH is 48bu/ac and were insured with a YP policy at 75%. Your yield guarantee is 36bu/ac. A loss of greater than 90% of the guarantee (36bu/ac*90% = 32.4bu/ac)

• Since 19 is less than 32.4 you would receive an indemnity payment.

• Other consideration: Whenever the producer receives only 35% of the payment for the first crop, whether planted or not, only 35% of the original premium on the policy for those acres will be charged. The yield history on any prevented planting acres for the following year will be calculated as 60% of the existing APH yield for that unit.
Policy Holder’s Important Dates to Note
Contract Change: The last RMA will make changes to the policy.
Sales Closing Date: All policy applications must be filed before the end of the sales closing date. Also the last day for making changes to any existing policies.
Cancellation Date: Last chance to cancel any existing policies, otherwise existing policies will renew automatically.
Production Reporting: Prior year’s acreage and production must be reported by the insured by this date.
Acreage Reporting: Insurance will not attach if acreage is not reported by this date.
Current crop year
End of Insurance: Occurs at harvest or by date attached to policy.
Last chance for notice of crop damage: Policy holders must notify of any damage on crop by this date.
Sources

USDA Risk Management Agency
ADM Crop Risk Services
Questions?
Comments?

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