

UTILIZING FEDERAL CROP INSURANCE: Coverage Alternatives and Marketing Strategies For Managing Grain Yield and Price Risk



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COVERAGE ALTERNATIVES:

INTRODUCTION:

Producing and marketing grain in today’s agricultural and economic environment historically carries with it narrow, uncertain profits as well as yield and price risk. Producers can manage and reduce these risks by utilizing revenue based federal crop insurance coupled with a pre-harvest marketing plan. Understanding crop insurance alternatives will enable producers to accomplish this risk management goal.

Included in this information piece are the following items: 1) general information regarding federal crop insurance, 2) Multi-Peril Crop Insurance (MPCI), 3) Crop Revenue Coverage (CRC), 4) Revenue Assurance with “fall harvest price option” (RA-HPO), 5) GRP/GRIP coverage, and 6) strategies for linking CRC/RA-HPO with a pre-harvest marketing plan.

GENERAL INFORMATION & PROVISIONS:

- The deadline to apply for coverage or to make changes to existing federal crop insurance coverage is March 15th.
- All federal crop insurance coverage calculations are based upon Actual Production History (APH – producer’s actual yield history) **or** a percentage of an established county yield called a T Yield or a combination of both. APH will require a minimum of four years of production records and will accumulate to a maximum of ten years of production records. Producers who have less than four years of production records will be required to use a County T Yield for those years without actual production records.

The County T Yield **is not** based upon Farm Service Agency (FSA) covered commodity crop program yields. The County T Yield **is** based upon an established county yield for a given insured crop in a given county. County T Yields vary by county and crop but not within counties. Once the farmer has four or more years of actual production records, they will no longer be required to use the County T Yield.

A reduction factor between .65 and 1.00 is applied to County T Yields to arrive at an Adjusted T Yield. An example follows using corn with a County T Yield of 130 bushels per acre.

Years of Actual Production Records	Factors	County T Yield Bushels / Acre	Adjusted APH Yield Bushels/Acre Coverage
0	.65	130	84.5
1	.80	130	104.0
2	.90	130	117.0
3	1.00	130	130.0
4	Producer’s Actual APH		

Production history is critical to maximizing any federal crop insurance coverage. Keeping records, verifying production, and providing actual production history can raise guaranteed yield levels used in coverage calculations.

The following example illustrates how important APH records are. In the example, corn is used assuming a County T Yield of 130 bushels/acre and an APH of 140 bushels/acre. The three insurance coverage levels used in this example are 65%, 75%, and 85%.

PRODUCTION RECORDS	APH FORMULA	APH YIELD	GUARANTEED YIELDS / ACRE		
			COVERAGE LEVEL		
			65%	75%	85%
4-10 yrs. APH 0 yrs. Co. T Yld.	4 x 140 Bu./A.	140.0 Bu./A.	91.0	105.0	119.0
3 yrs. APH 1 year Co. T Yld.	3 X 140 Bu./A. 1 X 130 Bu./A.	137.5 Bu./A.	89.4	103.1	116.9
2 yrs. APH 2 yrs. Co. T Yld.	2 X 140 Bu./A. 2 X 117 Bu./A.	128.5 Bu./A.	83.5	96.4	109.2
1 yr. APH 3 yr. Co. T Yld.	1 X 140 Bu./A. 3 X 104 Bu./A.	113.0 Bu./A.	73.5	84.8	96.1
0 yrs. APH 4 yr. Co. T Yld.	4 X 84.5 Bu./A.	84.5 Bu./A.	54.9	63.4	71.8

For annual crops and forage production, yields exceeding 2.3 times the County T Yield require verification by your insurance provider. Yields in excess of 4 times the T Yield will be rejected unless RMA authorization is obtained.

Insurance providers will collect the identification numbers (social security and employer identification numbers as applicable) for spouses and individuals insured under a single policy (a multi-interest individual policy).

Organic growers will be insured under an “organic factor” and no written agreement is required if the factor exists. If there is no “organic factor” for the grower’s county, the grower is required to have a written agreement. See your crop insurance agent.

- **APH When Adding Land:**

If adding land in the same county and the amount is less than 640 acres, the APH for the added land will be a simple average of the producer’s current land or the County T Yield, **whichever is greater**. If adding between 640 and 2,000 acres, your crop insurance agent submits the number of acres to RMA. They compare soil type and potential yield to what is already in the operation. If approved, the APH assigned is the same as for less than 640 acres. If denied, the APH is the County T-Yield. If adding land and the amount is greater than 2,000 acres, the APH for the added land will be the County T Yield.

If adding land in a neighboring county, the APH for the added land will be the County T Yield.

- **APH Yield Adjustments Election:**

Producers can elect to replace any year’s yield in their database with 60% of the County T Yield. **The election must be done in writing by insurance closing date – March 15.**

Example:

County T Yield: Corn 142 bu. x .60 = 85.2 bu. per acre yield adjustment
Soybeans 42 bu. x .60 = 25.2 bu. per acre yield adjustment

Based upon this example, for any year in the APH database, if the actual yield is below 85.2 bu. per acre for corn or below 25.2 bu. per acre for soybeans, the actual yield can be replaced with 60% of the County T Yield.

Also, if a producer has multiple-year losses, a “yield floor” provision comes into affect. Depending on how many years of actual yields are in the producer’s APH database, the yield floor ranges from 70% to 80% of the County T Yield. If the actual APH is below the yield floor, the yield floor is automatically used to calculate coverage. In some areas, producers may be able to increase the yield floor to 90% or 100% for an additional premium charge.

- **Unit Structure:**

Unit structure is an insurance coverage selection which enables the producer to combine field locations for coverage purposes. Unit structure choices differ by insurance coverage program. There are four types of unit structures available. They are: Basic, Optional, Enterprise, and Whole-Farm. Unit structure choice is determined by crop, by county, and by type of coverage selected.

- 1) Basic Unit: All 100% share land (owned & cash rented) is grouped together in one unit. Land share-cropped with each different landlord is another basic unit of its own, by crop. For basic units there is a 10% premium discount, in addition to the premium subsidies mentioned on page 4.
- 2) Optional Unit: For most crops, Basic Units of a given insurable crop can be divided into separate units by section and for irrigated practices. If planting practices cross section lines, land in both sections become part of the same Optional Unit. Optional Units must have separate production records. There is no additional premium discount beyond the premium subsidies mentioned on page 4.
- 3) Enterprise Unit: All insurable acres of the same insured crop by county, lumped together into one unit regardless of site location (ex.; all corn on rented and owned land combined into one unit). For enterprise units, there are sizable premium discounts in addition to the premium subsidies listed in the table on page 4. The discounts include the premium subsidy, the 10% basic unit discount, and a discount based upon the number of insured acres as shown below:

CRC Enterprise Unit Discounts:

	<u>Corn</u>	<u>Soybeans</u>
Basic unit discount	10%	10%
<u>Plus</u>		
Enterprise Unit Discount		
Acres: 50 - 299	19%	29%
300 - 549	25%	34%
550 & Above	30%	37%

Note: Must be planted in at least 2 different sections, 2 or more basic units, 2 or more optional units. Enterprise Units are not available in all areas so check with your crop insurance agent. RA Enterprise Unit discounts are similar but are based upon number of sections – see your agent.

- 4) Whole Farm Unit: All insurable acres, of all insured crops, lumped together into one unit, regardless of land location (all corn, soybeans, and wheat together in one unit). Whole farm unit structure is available with Revenue Assurance only.

Basic and Optional Units must be determined by April 29th for most crops. Enterprise and Whole Farm Units must be determined/elected by March 15th.

Yield coverage levels for most insurance types in most areas of Minnesota are as follows: 50, 55, 60, 65, 70, 80, and 85%. See your insurance agent for information specific to your situation and location.

- **Combining Units:**

If a producer chooses to combine units, the producer is required to sign an agreement that states this is the way the combined units will be farmed **permanently** into the future.

The combined unit structure then stays **permanently** with the land and goes with the land regardless: new owner, new tenant, etc.

Producers can not combine units separated by a distance of one township or more (Section # 1 & Section #4).

- **Premium Subsidy Levels:**

Congress, through the Agricultural Risk Protection Act of 2000, has authorized substantial premium subsidies. For 2005 they are as follows:

	Crop Insurance Coverage Level							
	<u>50%</u>	<u>55%</u>	<u>60%</u>	<u>65%</u>	<u>70%</u>	<u>75%</u>	<u>80%</u>	<u>85%</u>
2005 Premium Subsidy	67%	64%	64%	59%	59%	55%	48%	38%

- **Replant & Prevented Planting:**

Replant coverage is included in MPCI, CRC, RA and RA-HPO. Is not included in Catastrophic Risk Protection (CAT) coverage

Prevented planting coverage is included in MPCI, CRC, RA and RA-HPO.

When prevented planting occurs and no alternative crop is planted, hayed or grazed, the indemnity is 60% of the guarantee (40% for peas and sweet corn).

Replant and Prevented Planting applies when the lesser of 20 acres or 20% of the acres in the unit are affected. This is referred to as the 20/20 rule. If this occurs, it is essential you contact your insurance agent.

Late planting insurance coverage is included. Insurance coverage is reduced one percent per day for the first 25 days that planting is delayed beyond the established final planting deadlines, up to a maximum 25 percent reduction.

Example:

If you are planting any insurable crop and can not finish because of adverse weather, you must report this to your insurance agent within 72 hours after you decide not to plant the intended/insurable crop.

If you decide to plant a cover crop on the land you could not plant to the insurable crop, you can do so. However, you **can not** chop, hay, or graze the cover crop without a penalty.

If the cover crop is chopped, hayed, or grazed, the producer would receive a reduction in loss payment. The producer would also receive an assigned yield unless the land in question was an entire unit. They would also receive 60% of the APH on the affected land.

- **Producers Collecting FSA Disaster Assistance:**

Producers who have collected FSA disaster assistance under the Agricultural Assistance Act of 2003, are now required to purchase Federal Crop Insurance. The coverage **can not** be at the Catastrophic Risk Protection (CAT) level but must be at some level above CAT.

- **1st Crop – 2nd Crop:**

If the producer's 1st crop can not be planted or the first crop is planted and damage occurs and it can not be replanted, the producer can elect to plant a 2nd crop. The 2nd crop does not have to be insured.

If the 2nd crop is insured, the producer would receive 35% of the loss on the 1st crop. Later in the year, if there is no loss to the 2nd crop, the producer can collect the remaining loss (up to 100%) on the 1st crop.

If the 2nd crop is insured and fails, the producer receives 100% of the crop loss on the 2nd crop and keeps the 35% loss payment on the 1st crop.

- **Misreported Acres (new for 2005):**

If you over or under report your acres and/or crop share by more than 10%, any loss payment you may be entitled to will be reduced. The reduction will be equal to the percentage above the 10% allowance. With this change even “honest errors” can have an effect on any loss payments so be accurate in your reporting.

Example: You over report your acres by 19%. You have a loss payment. That loss payment will be reduced by 9% (the 19% over reported acres minus the 10% allowance).

- **Reporting FSA Farm Numbers (new for 2005):**

It is now required that correct FSA Farm Numbers be reported for all units. Misreported farm numbers may cause compliance problems with USDA. Check all insurance forms for accuracy. Notify your crop insurance agent of any changes to existing farm numbers as well as farm numbers for added land.

- **Estimated Acres (new for 2005):**

If you are unsure of the exact number of acres in a field and are waiting for FSA measurement service, indicate on your acreage report that the acres listed are an “estimate” and report the final acres when the measurement is completed. This process is important because acreage changes after the acreage reporting date are seldom allowed, especially if damage to the crop has already occurred.

- **APH Reductions (new for 2005):**

APH values may be reduced for excessive yields (yields greater than 400% of T yield), because of inconsistent yields (the APH yield for a particular unit exceeds 115% of the average of all units), or by using production methods that will result in yields less than those produced with prior production methods. Note: this is subject to change by RMA.

Example: Switching to non-irrigation on land previously irrigated.

MULTI-PERIL CROP INSURANCE (MPCI):

MPCI protects against **losses to crop yield only**.

APH and/or County T Yield is used in the coverage calculation.

Catastrophic Risk Protection (CAT) is the lowest level of coverage under MPCI.

Market Price elections are the insured crop per bushel payments levels, used to calculate MPCI coverages. These change each year.

- The 2005 Market Price elections are shown below (as of Feb. 1, 2005 these were the minimum price elections, RMA has the right to increase them):

<u>2005 Market Price Elections</u>	
Corn	\$2.20/bu.
Soybeans	\$5.00/bu.
Spring Wheat	\$3.50/bu.
Oats	\$1.60/bu.
Barley.....	\$2.35/bu.

Keep in mind, the Market Price elections have nothing to do with actual crop market prices. These price elections are used in coverage calculations only. Price elections do not change for the crop year and remain in effect for the duration of the policy.

Insurance yield coverage levels for MPCCI range from 50 to 85% in five percent increments.

- Following is the formula for calculating coverage level in bushels and dollars per acre for MPCCI coverage:

$$\frac{\text{APH Proven Yield}}{\text{Coverage Level \%}} \times \frac{\text{Guaranteed Bushels/Acre}}{\text{Market Price Election}} = \frac{\text{Coverage Level}}{\text{\$ Per Acre}}$$

Premiums and premium subsidies apply to MPCCI. A \$30 per crop administration fee is also charged. For CAT there is a \$100 per crop administrative fee.

Replant and prevented planting coverage applies to MPCCI. CAT does not have replant coverage.

A Hybrid Seed Price Endorsement is available for MPCCI. The endorsement makes available a revenue guarantee for hybrid seed producers. See your insurance agent for more information.

Under MPCCI, production at a level below your bushel guarantee per acre will indicate an indemnity or loss. The bushel difference between your bushel guarantee and your actual production multiplied by the Market Price Election will be the indemnity loss.

REVENUE-BASED CROP INSURANCE PRODUCTS -CRC & RA-HPO:

CROP REVENUE COVERAGE (CRC):

CRC protects against **revenue loss due to yield loss and/or price fluctuation** by converting your bushel guarantee per acre to a dollar guarantee per acre.

APH and/or County T Yield is used in the coverage calculation for CRC.

CRC yield coverage choices range from 50 to 85% in five percent increments for most of Minnesota. Check with your crop insurance representative for more information.

CRC coverage includes the choice of Basic, Optional, or Enterprise Unit structures.

Administrative fees for CRC coverage are \$30 per crop.

Premiums apply to CRC. Premiums are subsidized by the federal government (see page 4). Premiums are based upon the Base Price and remain the same even if the Harvest Price is different than the Base Price.

Replant and prevented planting coverage is included in CRC coverage.

Base and Harvest Price levels used in CRC calculations are an average Chicago Board of Trade (CBOT) or Minneapolis Grain Exchange (MGE) futures prices on specific contract months depending on the crop. See pages 7 & 8 for the formulas used to determine these prices.

Local elevator prices have no impact on CRC coverage guarantees or payments.

REVENUE ASSURANCE with “fall harvest price option” (RA-HPO):

- The following description of Revenue Assurance is based upon the product including the “fall harvest price option”. Purchasing RA only and not including the “fall harvest price option” does not offer protection of loss due to price fluctuation and greatly increases price risk. On page 10 there is an example of how this can affect producer coverage.

RA-HPO coverage provides protection from **revenue loss due to yield loss and/or price fluctuation**.

The calculations for Actual Production History (APH) and the use of County T Yields with factors are the same for RA-HPO as they are for MPCCI and CRC coverage.

RA-HPO coverage is available for Basic, Optional, Enterprise, or Whole Farm unit structures.

RA-HPO yield coverage levels are available in percentages from 65% to 85%, in 5% increments, for Basic, Optional, Enterprise, and Whole Farm unit structures. Producers can buy 80 & 85% RA-HPO in areas that have 80 & 85% coverage level for MPCCI. Check with your crop insurance agent.

RA-HPO coverage applies to corn, soybeans, spring wheat, barley, sunflowers, and canola in counties where these crops are insurable.

Replant and prevented planted coverage is included in RA-HPO coverage.

Premiums are attached to RA-HPO coverage. The premiums are subsidized by the federal government (see page 4).

Administration fees of \$30 per crop apply.

Base and Harvest Price levels used in RA-HPO calculations are an average Chicago Board of Trade (CBOT) or Minneapolis Grain Exchange (MGE) futures prices on specific contract months depending on the crop. See pages 7 & 8 for the formulas used to determine these prices.

With RA-HPO coverage (includes the “fall harvest price option”), there is no price movement limits as there were with the CRC coverage. During high crop prices, because the Base and Harvest Prices are an average of the futures price, this factor may be of some importance.

Local elevator prices, basis levels, or your grain sale price have no impact on guaranteed price levels or indemnity payments for RA-HPO coverage.

- **Base & Harvest Price Determinations for CRC & RA-HPO:**

For both CRC and RA-HPO coverage there are two prices used to determine coverage levels. One price is determined in the spring prior to insurance sign-up and the second is determined in the fall near harvest time.

Unlike MPCCI coverage where the Market Price Election does not change throughout the year, the prices used for determining coverage for CRC and RA-HPO more closely reflect any changes in crop prices. Because of these changes and the utilization of both a Base and Harvest Price, the revenue based crop insurance products offer coverage of losses due to yield loss and loss due to price fluctuation or a revenue coverage.

Follow is the procedure for calculating the Base and Harvest Price for CRC and RA-HPO, by crop:

- **Corn**

Base Price: 100% of the average daily settlement price in February for December corn futures on the CBOT.

Harvest Price: **CRC:** 100% of the average daily settlement price in **October** for December corn futures on the CBOT. For CRC, Harvest Price is limited to the Base Price plus or minus \$1.50 per bushel.

Harvest Price: **RA-HPO:** 100% of the average daily settlement price in **November** for December corn futures on the CBOT. For RA-HPO, there are no limits on the Harvest Price movement compared to the Base Price.

- **Soybeans**

Base Price: 100% of the average daily settlement price in February for November soybean futures on the CBOT.

Harvest Price: **CRC & RA-HPO:** 100% of the average daily settlement price in October for November soybean futures on the CBOT. For CRC, Harvest Price is limited to the Base Price plus or minus \$3.00 per bushel. For RA-HPO, there is no limit on the movement of the Harvest Price in comparison to the Base Price.

- **Spring Wheat**

Base Price: 100% of the average daily settlement price in February for September spring wheat futures on the Minneapolis Grain Exchange.

Harvest Price: **CRC & RA-HPO:** 100% of the average daily settlement price in August for September spring wheat futures on the Minneapolis Grain Exchange. For CRC, Harvest Price is limited to Base Price plus or minus \$2.00 per bushel. For RA-HPO, there is no limit on the movement of the Harvest Price in comparison to the Base Price.

• **Formulas for Calculating Coverage Levels for CRC and RA-HPO:**

Unlike MPCCI coverage where there is one calculation for the coverage amount and a second for the indemnity loss, the revenue based insurance products have four calculations for determining coverage and loss. Those calculations are as follows:

- **Minimum Revenue Guarantee:**

APH x % coverage level = bushel guarantee/acre x Base Price = Minimum Revenue Guarantee

Example: Soybeans 40 APH x 75% = 30 bu. x \$5.26 = \$157.80 per acre

The Minimum Revenue Guarantee for coverage is established by the March 15th closing date. This level of coverage guarantee will not be reduced and will be the lowest amount of coverage the producer will have on the given crop. However, if the Harvest Price is greater than the Base Price, the producer's level of coverage will increase. Premium costs however, do not increase when Harvest Price is above Base Price.

Note: a general rule of thumb is to never pre-harvest market (sell grain March – May before the crop is planted) more than the bushel guarantee. To do so, greatly increases risk and becomes a speculative position.

- **Final Revenue Guarantee:**

APH x % coverage level = bu. guarantee/ac. x higher of Base or Harvest Price = Final Revenue Guarantee

Example: Soybeans 40 APH x 75% = 30 bu. x \$7.32 = \$219.60

For the Final Revenue Guarantee calculation, the **higher** of the Base or Harvest Price is used. If the Harvest Price is greater than the Base Price, producer coverage per acre increases without additional premium costs.

- **Actual Production Value:**

Actual Production x Harvest Price = Actual Production Value

Example: Soybeans 25 bu. x \$7.32 = \$183.00

To calculate Actual Production Value, the Harvest Price is always used.

- **Indemnity Payment:**

The difference between the Final Revenue Guarantee and the Actual Production Value is the amount of indemnity or loss payment for that crop year.

Example: Soybeans \$219.60 - \$183.00 = \$36.60 indemnity payment per acre

Note: Producers have 45 days after the harvest price is announced to file a revenue loss claim.

- **Coverage Examples:** Coverage examples include hypothetical CRC and RA-HPO Base and Harvest Prices. Your actual Base and Harvest prices will differ from those shown in the examples on the next page.

The corn example shows an actual yield above the insurance bushel guarantee and a Harvest Price below the Base Price (assume Harvest Price is the same for CRC and RA-HPO). The result is no indemnity payment.

The soybean example shows an actual yield below the insured bushel guarantee and a Harvest Price greater than the Base Price. The result is an indemnity payment.

The spring wheat example shows an actual yield exactly the same as the bushel guarantee with an increase in the Harvest Price over the Base Price. Therefore, there is no indemnity payment.

CORN – CRC/RA-HPO			
APH.....	140bu./ac.	Minimum Revenue Guarantee.....	\$254.10/ac.
Coverage Level.....	75%	(Bu. Guarantee x Base Price)	
Bushel Guarantee.....	105 bu.	Final Revenue Guarantee.....	\$254.10/ac.
Base Price.....	\$2.42/bu.	(Bu. Guarantee x Higher of Base Price or Harvest Price)	
Harvest Price (RA-HPO).....	\$2.37/bu.	Actual Production Value.....	\$391.05/ac.
Actual Production.....	165 bu./ac.	(Actual Production x Harvest Price)	
	\$254.10	-	\$391.05 = \$ 0/acre
	Final Guarantee		Production Value Indemnity Payment

SOYBEANS – CRC/RA-HPO			
APH.....	42 bu./ac.	Minimum Revenue Guarantee.....	\$165.69/ac.
Coverage Level.....	75%	(Bu. Guarantee x Base Price)	
Bushel Guarantee.....	31.5 bu.	Final Revenue Guarantee.....	\$230.58/ac.
Base Price.....	\$5.26/bu.	(Bu. Guarantee x Higher of Base Price or Harvest Price)	
Harvest Price.....	\$7.32/bu.	Actual Production Value.....	\$183.00/ac.
Actual Production.....	25 bu./ac.	(Actual Production x Harvest Price)	
	\$230.58	-	\$183.00 = \$47.58/acre
	Final Guarantee		Production Value Indemnity Payment

SPRING WHEAT – CRC/RA-HPO			
APH.....	40bu./ac.	Minimum Revenue Guarantee.....	\$109.20/ac.
Coverage Level.....	75%	(Bu. Guarantee x Base Price)	
Bushel Guarantee.....	30 bu.	Final Revenue Guarantee.....	\$113.10/ac.
Base Price.....	\$3.64/bu.	(Bu. Guarantee x Higher of Base Price or Harvest Price)	
Harvest Price.....	\$3.77/bu.	Actual Production Value.....	\$113.10ac.
Actual Production.....	30 bu./ac.	(Actual Production x Harvest Price)	
	\$113.10	-	\$113.10 = \$0/acre
	Final Guarantee		Production Value Indemnity Payment

- **Indemnity Payment When Harvest Price is Below Base Price:**

Due to the revenue coverage provision in the revenue based crop insurance products, even though a producer may have no yield loss, there may still be an indemnity payment. This can occur if the Harvest Price is less than the Base Price. Following is an example of how this might occur:

Example Assumptions:

- Corn w/APH = 140 bu./A
- Bushel Guarantee = 105 bu./A
- Actual production = 105 bu./A
- Base Price = \$2.42/bu.
- Harvest Price (RA-HPO)= \$2.37/bu.

$$\frac{\$2.42 \text{ Base Price}}{\$2.37 \text{ Harvest Price}} = 1.021 \text{ Factor}$$

Calculations:

$$\begin{aligned} -140 \text{ bu. APH} \times 75\% \text{ coverage} &= 105 \text{ bu. guarantee} \\ -105 \text{ bu. guarantee} \times 1.021 \text{ Factor} &= 107.21 \text{ bu/ac.} \\ &\text{Trigger Yield} \end{aligned}$$

$$\begin{aligned} -107.21 \text{ Trigger Yield} - 105 \text{ bu. guarantee} &= 2.21 \text{ bu.} \\ -2.21 \text{ bu.} \times \$2.37 \text{ Harvest Price} &= \mathbf{\$ 5.24 \text{ per acre}} \end{aligned}$$

Indemnity Payment

In this example, even though the producer’s actual production was right at the insured bushel guarantee amount per acre, the producer would still receive an indemnity payment. The reason this occurs is because of the revenue portion of the revenue based crop insurance product. Because the Harvest Price was less than the Base Price, the resulting factor translates into a small indemnity payment.

Producers need to be aware of this issue. Producers have 45 days in which to report this type of loss. If that timeline goes by, the insurance agent can no longer make the indemnity payment.

- **Result of Purchasing RA Without the “Fall Harvest Price Option”:**

Soybean Example:

Assumptions:

42 Bu. APH	75% Coverage Level	31.5 Bu. Guarantee Per Acre
25 Bu. Actual Yield	Base Price = \$5.26	Harvest Price = \$7.32

RA-HPO: Minimum Revenue Guarantee = 42 bu. x .75 = 31.5 bu. x \$5.26 = \$165.69/Ac.
 Final Revenue Guarantee = 42 bu. x .75 = 31.5 bu. x \$7.32 = \$230.58/Ac.
 Actual Production Value = 25 bu. x \$7.32 = \$183.00/Ac.

$$\text{Indemnity} = \$230.58 - \$183.00 = \mathbf{\$47.58/Ac.}$$

RA Only – No “Fall Harvest Option”:

Minimum Revenue Guarantee = 42 bu. x .75 = 31.5 bu. x \$5.26 = \$165.69/Ac.
 Final Revenue Guarantee = - - same as Minimum Revenue Guarantee - - = \$165.69/Ac.
 Actual Production Value = 25 bu. x \$7.32 = \$183.00/Ac.

$$\text{Indemnity} = \$165.69 - \$183.00 = \mathbf{\$ - 0 -}$$

For the producer that did not purchase the “fall harvest option” with the RA coverage, the Final Revenue Guarantee was the same as the Minimum Revenue Guarantee, because the Harvest Price does not increase under RA only. The result of this was a loss of indemnity of \$47.58 per acre in this example.

The point here is that producers need to seriously consider purchasing the “fall harvest price option” when buying RA insurance coverage if they are planning to pre-harvest market any grain.

GROUP RISK PROTECTION (GRP):

GRP coverage is based upon whether or not the county, not the insured, experiences a yield loss. GRP indemnifies the insured in the event the county average per acre yield or payment yield falls below the County NASS Yield. Assume the County NASS Yield for corn is 130 bu. per acre. If the county-wide yield average for corn in any given year is 120 bu. per acre, any producer with GRP insurance coverage would receive an indemnity payment on a 10 bu. per acre corn loss. GRP does not offer individual farm or producer coverage. The producer in this example could have produced a 140 bu. corn yield or a 60 bu. corn yield and it would not have affected the indemnity payment. Again, the indemnity payment is based upon the relationship between the NASS Yield and the county-wide average produced for a given year for a given crop.

GRP does not require APH.

GRP is used most often to insure crops such as forage crops.

Coverage levels range from 70% to 90%, in 5% increments.

Administrative fees are \$100 per crop for CAT coverage under GRP. Additional coverage at \$30 per crop.

Unit structure is the county.

GRP covers only yield losses and there is no revenue coverage included. Therefore, GRP is not a good choice when pre-harvest marketing grain.

GROUP RISK INCOME PROTECTION (GRIP):

Under GRIP, producers would receive an indemnity payment any time the actual county revenue drops below what is called a “trigger revenue” that is chosen by the farmer. The trigger revenue is calculated by using an expected price, expected county yield, and the level of coverage. Any indemnity payment made has nothing to do with what the actual revenue is for the farmer.

The expected price is the average of the CBOT futures price five days before March 1. For corn, the December futures contract is used. For soybeans it is the November futures contract. The expected yield is chosen by the farmer. The coverage levels include 70, 75, 80, 85, & 90 percent levels.

The trigger revenue is the expected county yield multiplied by the expected price multiplied by the coverage level.

Example: 150 bu. corn x \$2.60 x 85% = \$331.50 trigger revenue

If the actual county revenue falls below the \$331.50 per acre due to a yield loss or a change in price or both, the producer receives an indemnity payment, regardless of what their actual farm revenue per acre is for that year.

Because GRIP relates to a county revenue amount and not to a producer’s actual revenue amount, GRIP does not give the necessary revenue coverage to enable a producer to pre-harvest market grain with confidence.

THINGS TO THINK ABOUT:

- A producer’s choice between CRC and RA-HPO is a matter of two considerations. First, coverage selection is one of deciding which has the lesser premium. Second, given recently high commodity prices, you may want to consider purchasing RA-HPO because there are no limits on the increase of the Harvest Price compared to the Base Price. Check with your crop insurance agent regarding the cost per acre and assistance making your decision.
- Pre-harvest marketing of crops can not be done successfully without a revenue-based insurance product such as CRC or RA-HPO. The use of a revenue based crop insurance product greatly reduces production and price risk.

- If a producer is already purchasing a revenue based crop insurance product but is not pre-harvest marketing, they are not getting their monies worth out of the crop insurance protection. The producer is paying for the provisions in the CRC and RA-HPO insurance that allow for pre-harvest marketing.
- Many producers are reluctant to pay the higher premiums associated with CRC or RA-HPO. Their reason is that “I never collect a payment from the policy”. Well, think about it in a bit of a different way. How many producers have life insurance or car insurance? How many expect to collect an indemnity payment on those policies this year? I would guess none. So it is with crop insurance. Producers purchase crop insurance to manage production and price risk (just like risk of a car crash or risk of premature death), not to make money by collecting indemnity payments.

If there is no indemnity payment, the grain is there to market and if done effectively, producers will have more than covered the additional cost of the insurance premiums. See examples on pages 13 – 16.

- **A rule of thumb is “do not pre-harvest market more than the revenue based crop insurance bushel guarantee minus grain needed for feed, delivery to an ethanol or soybean processing plant, etc.”. To do so greatly increases the producer’s risk and becomes a speculative position.**

STRATEGIES FOR MANAGING GRAIN YIELD & PRICE RISK:

GRAIN PRICE SEASONALITY:

Historically, grain prices have been highest before harvest. Sales of grain before harvest are often called “pre-harvest” sales. During this pre-harvest marketing period, the months of March through May, have offered the best opportunity to price grain. During spring planting, there is often an upward bias in the futures market due to the uncertainty about getting the crop planted – too hot, too cold, too wet, too early..... This opportunity does not exist every year, but the odds strongly favor it. Since 1980, the spring corn price for harvest delivery has been above the price at harvest 72% of the time or 7 out of 10 years. For soybeans and wheat it is 64% of the time. The bottom line – the best pricing opportunities often occur before or during the time producers are planting crops.

By forward pricing grain during this pre-harvest period or the period prices are seasonally at their highest, producers can greatly increase farm income. According to work done by Ed Usset, University of Minnesota Extension Marketing Specialist, the average price advantage over the past 25 years for pre-harvest marketing corn is \$.20 per bushel. For soybeans, the average increase is \$.29 per bushel. For spring wheat, the average increase is \$.11 per bushel. These levels can mean the difference between profit and loss for the year.

Good marketing is not finding the high price. Good pre-harvest marketing is a strategy that finds a better average price over the long-run. An additional 10-20 cents per bushel can increase net farm income by 33-50%. By getting a better average price over the long-run, a producer will consistently make a profit and therefore will remain in business.

One additional thing to remember is **never** pre-harvest price grain below the county FSA loan rate. If a producer does nothing, they should be able to sell grain at FSA loan rate. A good target for a minimum price threshold (lowest value for making a sale) might be to add \$.15 - \$.20 per bu. of corn to the loan rate or for soybeans to add \$.30 - \$.50 per bushel to the loan rate. A second method a producer can use for establishing a minimum price threshold is to calculate and use their per bushel cost of production (includes return to labor and management but is minus government payments) as the minimum price threshold.

To capture the price advantage during the pre-harvest period, a producer needs to price grain during that period using a forward cash contract, futures fixed contract (HTA), or hedge. To manage/reduce risk, the producer must also utilize a crop revenue insurance product along with the pre-harvest marketing plan.

CROP REVENUE INSURANCE & PRE-HARVEST GRAIN MARKETING:

CRC and RA-HPO are revenue based crop insurance products as outlined earlier in this information piece. Both provide coverage for losses of revenue due to yield losses **and** price fluctuation. MPCI coverage (except for the Hybrid Seed Endorsement Option) does not offer the revenue guarantee. By utilizing either CRC or RA-HPO coupled with a pre-harvest marketing plan, a producer can price at least their total crop insurance bushel guarantee with minimal yield and price risk.

Following is an example of how pre-harvest marketing, coupled with a revenue based crop insurance product, can greatly enhance a producer's income from marketing grain.

Example Scenarios: Crop Year Comparison MPCI vs RA-HPO (using RA-HPO because it is less expensive than CRC) for a South Central Minnesota Farm example (may differ by area of state)

****NOTE:** *For the following examples, the Multi-Peril Price Election, the RA-HPO Base and Harvest Prices, and the premiums used are hypothetical prices. Your actual Base & Harvest Prices and premiums will differ by year and can be substituted into the formulas for calculation purposes.*

Assumptions:

- 600 acres of corn
- 142 bu. APH
- 75% yield coverage for MPCI and RA-HPO
- MPCI Premium cost - \$7.51 per acre
- MPCI Market Price Election = \$2.20
- RA-HPO Premium cost - \$10.45 per acre (cheaper than CRC)
- RA-HPO Base Price = \$2.42
- Any pre-harvest sales are accomplished by a simple cash forward contract
- Any grain not pre-harvest sold, will be sold at harvest

Bushel Guarantee & Premium Cost Calculations:

- MPCI bushel guarantee: $142 \text{ bu. APH} \times 75\% \text{ coverage level} = 106.5 \text{ bu. guarantee per acre}$
- MPCI total bu. guarantee: $106.5 \text{ bu. guarantee per acre} \times 600 \text{ acres} = 63,900 \text{ bu.}$
- MPCI coverage level: $106.5 \text{ bu. guarantee per acre} \times \$2.20 \text{ Market Price Election} = \$234.30 \text{ coverage/ac.}$
- MPCI premium cost: $600 \text{ acres} \times \$7.51 \text{ per acre} = \mathbf{\$4,506 \text{ total premium cost}}$

- RA-HPO bushel guarantee: $142 \text{ bu. APH} \times 75\% \text{ coverage level} = 106.5 \text{ bu. guarantee per acre}$
- RA-HPO total bu. guarantee: $106.5 \text{ bu.} \times 600 \text{ acres} = 63,900 \text{ bu.}$
- RA-HPO Minimum Revenue Guarantee:
 $106.5 \text{ bu. guarantee per acre} \times \$2.42 \text{ Base Price} = \$257.73 \text{ Minimum Revenue Guarantee}$
- RA-HPO premium cost: $600 \text{ acres} \times \$10.45 \text{ per acre} = \mathbf{\$6,270 \text{ total premium cost}}$

Scenario #1: For both MPCI & RA-HPO, pre-harvest total crop insurance bushel guarantee

Assumptions:

- Pre-harvest price March 16 for new crop corn, fall delivery = \$2.30 per bushel.
- Producer feels the \$2.30 per bushel is a good price and decides to pre-harvest market total bushel guarantee
- Actual production for the year was 95 bu. of corn per acre (assume all acres affected equally)
- Fall cash corn price at harvest was \$2.80 bu.
- Corn buy-back price if short bushels was \$2.90 per bu.
- MPCI Market Price Election = \$2.20
- RA-HPO Base Price = \$2.42
- RA-HPO Harvest Price = \$3.05
- FSA Loan Rate = \$1.83

Calculations:

-Pre-harvest sales: 63,900 bu. x \$2.30 per bu. = **\$146,970**

-Yield loss: 106.5 bu. guarantee per acre – 95 bu. per acre actual production = 11.5 bu. per acre loss

-MPCI Indemnity per acre: 11.5 bu. per acre x \$2.20 Market Price Election = \$25.30 per acre

-MPCI Indemnity total: \$25.30 per acre x 600 acres = **\$15,180 total indemnity**

-RA-HPO Indemnity:

Final Revenue Guarantee: 106.5 bu./ac. x **higher of** Base or Harvest Price = Final Revenue Guarantee
106.5 bu./ac. x \$3.05 = \$324.83

Actual Production Value: 95 bu./ac. x Harvest Price \$3.05 = \$289.75 Actual Production Value

Final Revenue Guarantee - Actual Production Value = Indemnity Payment

\$324.83 - \$289.75 = \$35.08 per acre Indemnity Payment

-RA-HPO Indemnity total: \$35.08 per acre x 600 acres = **\$21,048 total indemnity**

-Bushel shortage on pre-harvest contract: actual production – pre-harvest sales = shortage

95 bu./ac. x 600 acres = 57,000 bu. actual production – 63,900 bu. pre-harvest sales = 6,900 bu. shortage

-Cost to buy-back bushels: 6,900 bu. x \$2.90 per bu. = **\$20,010 buy-back bushels**

-LDP: none because harvest price was above the loan rate.

Financial Results:

	<u>MPCI</u>	<u>RA-HPO</u>
Total pre-harvest sales:	\$146,970	\$146,970
Bushel Buy-back:	- \$ 20,010	- \$ 20,010
Harvest Sales:	+\$ 0	+\$ 0
LDP:	+\$ 0	+\$ 0
Indemnity Payment:	+\$ 15,180	+\$ 21,048
Total Premium Cost:	- \$ 4,506	- \$ 6,270
Net Results:	\$137,634	\$141,738

Income Difference – Total & Per Acre:

-Total Dollar Difference: RA-HPO Income – MPCI Income = Total Dollar Difference

\$141,738 - \$137,634 = **\$4,104 Total Dollar Difference**

-Dollar Difference Per Acre: Total Dollar Difference Per Acre ÷ Total Acres

\$4,104 Total Dollar Difference ÷ 600 Acres = **\$6.84 Per Acre**

NOTE: Given this scenario, there is a net advantage that goes to the RA-HPO coverage. The reason is that, unlike the MPCI coverage, RA-HPO covers both the yield loss as well as the change in price at harvest. Note that the RA-HPO indemnity payment not only covered all the buy-back bushels but the producer would have had an additional \$1,038 remaining. When the additional premium for the RA-HPO is factored in, there is still an advantage to the RA-HPO coverage.

Because the revenue based crop insurance coverage insures for losses resulting from yield loss and/or a change in price, producers can pre-harvest market with confidence, knowing these potential losses are covered.

Scenario #2: For MPCl No Pre-harvest Sales, For RA-HPO, pre-harvest total crop insurance bushel guarantee

Assumptions:

- Pre-harvest price March 16 for new crop corn, fall delivery = \$2.30 per bushel.
- Producer feels the \$2.30 per bushel is a good price and decides to pre-harvest market total bushel guarantee
- Actual production for the year was 165 bu. of corn per acre
- Fall cash corn price at harvest was \$1.85 bu.
- Corn buy-back price if short bushels was \$1.95 per bu.
- MPCl Market Price Election = \$2.20
- RA-HPO Base Price = \$2.42
- RA-HPO Harvest Price = \$2.37
- FSA Loan Rate = \$1.83

Calculations:

- Total production: 165 bu. per acre x 600 acres = 99,000 bushels total production
- RA-HPO Pre-harvest sales: 63,900 bu. x \$2.30 per bu. = **\$146,970**
- Yield loss: 106.5 bu. guarantee per acre – 165 bu. per acre actual production = 0 bu. per acre loss

- MPCl Indemnity per acre: 0 bu. per acre x \$2.20 Market Price Election = \$ 0 per acre
- MPCl Indemnity total: \$ 0 per acre x 600 acres = **\$ 0 total indemnity**

- MPCl Harvest Bushels Sales: total production – pre-harvest sales = harvest sales
99,000 bu. total production – 0 pre-harvest sales = 99,000 total MPCl Harvest Sales

- MPCl Harvest Sales Value: 99,000 bu. x \$1.85 harvest price = **\$183,150 Total MPCl Harvest Sales**

- RA-HPO Indemnity:

Final Revenue Guarantee: 106.5 bu./ac. x **higher of** Base or Harvest Price = Final Revenue Guarantee
106.5 bu./ac. x \$2.42 = \$257.73

Actual Production Value: 165 bu./ac. x Harvest Price \$2.37 = \$391.05 Actual Production Value

Final Revenue Guarantee - Actual Production Value = Indemnity Payment
\$257.73 - \$391.05 = \$ 0 per acre Indemnity Payment

- RA-HPO Indemnity total: \$ 0 per acre x 600 acres = **\$ 0 total indemnity**

- Bushel shortage on pre-harvest contract: actual production – pre-harvest sales = shortage
1655 bu./ac. x 600 acres = 99,000 bu. actual production – 63,900 bu. pre-harvest sales = 0 bu. shortage

- RA-HPO Harvest Sales: total production – pre-harvest sales
99,000 bu. – 63,900 bu. = 35,100 bu. RA-HPO Harvest Sales bu.
35,100 harvest sale bu. x \$1.85 harvest price = **\$64,935 Total RA-HPO Harvest Sales Value**

- Cost to buy-back bushels: 0 bu. x \$1.95 per bu. = **\$ 0 buy-back bushels**

- LDP: none because harvest price was slightly above the loan rate.

Financial Results:	<u>MPCI</u>	<u>RA-HPO</u>
Total pre-harvest sales:	\$ 0	\$146,970
Bushel Buy-back:	- \$ 0	- \$ 0
Harvest Sales:	+\$183,150	+\$ 64,935
LDP:	+\$ 0	+\$ 0
Indemnity Payment:	+\$ 0	+\$ 0
Total Premium Cost:	- \$ 4,506	- \$ 6,270
Net Results:	\$178,644	\$205,635

Income Difference – Total & Per Acre:

-Total Dollar Difference: RA-HPO Income – MPCI Income = Total Dollar Difference
 \$205,635 - \$178,644 = **\$26,991 Total Dollar Difference**

-Dollar Difference Per Acre: Total Dollar Difference Per Acre ÷ Total Acres
 \$26,991 Total Dollar Difference ÷ 600 Acres = **\$44.99 Per Acre**

NOTE: Given this scenario, there is an even greater net advantage that goes to the RA-HPO coverage. The reason here is that there was no indemnity payment for either the MPCI or the RA-HPO **and** the fall cash price went down in comparison to the pre-harvest price cash price.

Because the revenue based crop insurance coverage insures for losses resulting from yield loss and/or a change in price, this producer could take advantage of the higher pre-harvest price with confidence, knowing that if there were to be losses due to yield or price change, these potential losses are covered.

• **Producer Concern With Pre-harvest Marketing And A Late Summer/Fall Price Increase:**

Producers may be concerned that if they pre-harvest market grain (March through May), that the price will go up in the fall and they will miss out on a pricing opportunity. This has happened with corn, soybeans, and spring wheat in the past. There are two issues to think about here and they are addressed as follows:

- 1) Remember, the rule of thumb is not to pre-harvest market more than the total revenue based crop insurance bushel guarantee (APH x coverage level x total acres). To do so greatly increases production and price risk. If the producer stays within the bushel guarantee amount, there will be unsold bushels left for sale later in the year.

Example:

Assume a 142 bu. corn APH, 75% coverage level, 600 acres of corn, and an actual yield of 165 bu. per acre.

The bushel guarantee would be a total of 63,900 bushels of corn. Total production would be 99,000 bushel leaving 35,100 bushel for sale at a later date.

If price does go up, the producer can sell the remaining bushels at the higher price. If the producer has adequate on-farm storage, they can store the grain and enter into a post-harvest plan **IF** there is carry to capture in the market.

- 2) A producer has calculated the cost of production for corn to be \$2.05 per bushel. That figure includes all family living costs as well as all other costs of production, minus government payments. This is the price the producer must get from the market place in order to make a profit. The producer decides this price will be the minimum price threshold, below which no sales will be made.

Assume the producer has in place a pre-harvest marketing plan that includes the minimum price threshold of \$2.05 per bushel of corn, all price targets, and all decision dates. Further assume that the producer has purchased a revenue based crop insurance product so that a pre-harvest strategy can be put in place while still reducing and transferring risk.

Assume further that the producer has an average basis of \$.40 under, the Dec. corn futures contract is trading at \$2.20 and stays there well into early August. The best the producer can get for new crop corn delivered in the fall is \$1.80 per bushel cash price.

As the producer moves through the pre-harvest plan, discipline dictates that no sales are made because the \$1.80 per bushel is well below the producer's minimum price threshold of \$2.05. Therefore, the producer does not make any sales as the decision dates come and go.

Assume that in mid-August of the crop year, the Dec. futures prices takes off and goes up to \$2.76. In addition, the basis narrows to \$.28 under. The producer, because of the discipline of the pre-harvest plan, has not made any corn sales. The local cash price has now gone way up and the producer can receive \$2.48 per bushel of new crop corn, fall delivery, which is well above the minimum price threshold. Because the producer has not made any sales, the bushels are still available to do so **and** because the revenue based crop insurance is in place, the producer can now make those contract sales.

Conclusion:

Even though there is a pre-harvest marketing plan in place, if the minimum price threshold or any other part of the plan is not met, sales are not made and the bushels remain and can be sold if the price goes up. If done correctly, a pre-harvest marketing plan does not necessarily lock a producer out of a market opportunity.

A far larger challenge than following the pre-harvest plan when the market is low, is to have the discipline to follow it when the price goes up. DO NOT get greedy, watch the price go up and then watch the price go back down to the levels below the minimum price threshold!

SUMMARY

- Producing and marketing grain in today's economy offers narrow, uncertain profit margins.
- Historical price seasonality is real and allows producers to capture pre-harvest prices during the March through May time period. Based upon historical crop prices, had a producer pre-harvest marketed (sold crop during the March through May time period before planting the crop) over the past 25 years and purchased a revenue based crop insurance product, they would have significantly increased their income. They would have added, on average each year, an additional \$.20 per bushel of corn, \$.29 per bushel of soybeans, and \$.11 per bushel of spring wheat sold pre-harvest.
- According to a study being done by Iowa State University, adding only \$.10 per bushel of grain sold, would increase a producer's net farm income by 33 – 50%. **That is done by achieving a better average price over the long-run.**
- Remember establishing the pre-harvest minimum price threshold. County FSA loan rate should be the absolute minimum but prices above that are achievable **OR** utilize the producer's cost of production.
- Pre-harvest pricing of grain without managing production risk renders the producer financially vulnerable. Both production risk and price risk can be managed by purchasing a revenue based crop insurance product such as CRC or RA-HPO.
- Revenue insurance products cover lost revenue due to yield loss and price fluctuation. See examples on pages 13 – 16.

- Revenue insurance products are not a substitute for good marketing. However, when a revenue insurance product is combined with pre-harvest pricing of grain, income potential can be increased substantially. See examples on pages 13 – 16.
- If a producer is purchasing a revenue based crop insurance product, such as CRC or RA-HPO, and they are not also pre-harvest marketing, they are not getting their monies worth out of the insurance coverage. They have covered losses due to yield loss and/or changes in price but have not gone the next step and captured the pre-harvest price advantage along with the revenue coverage.
- If a producer has purchased hail insurance in the past, think about decreasing or eliminating that coverage and consider moving to CRC or RA-HPO. Historically throughout the U.S., the major reasons for crop loss are, in order of occurrence: 1) drought -39%, 2) excess moisture – 34%, and 3) hail – 8%. The point is, federal crop insurance covers hail losses. By purchasing higher coverage levels of CRC or RA-HPO, you may get more coverage for less money. In addition, these revenue products offer revenue coverage which can be coupled with a pre-harvest marketing plan. As shown in examples on pages 13 - 16, this strategy can increase income and reduce both production and price risk.

Another thought on hail is if a producer has high incidence of hail damage with an indemnity payment, say 7-8 years out of 10 years on the hail insurance policy, the producer may want to continue purchasing hail insurance. However, if the producer plans to pre-harvest market grain, they must purchase a revenue based crop insurance product to protect against both production and price risk.

- Each farm operation is unique. Each producer needs to work closely with their insurance agent to develop a coverage plan best suited for their operation and situation.