

Production Risk

Nebraska Legal
Services

Introduction

Production risks have been a large part of Nebraska agriculture since the days of the pioneers. Conditions in Nebraska are seldom optimal. Weather, disease and insects result in a continual struggle to achieve desired production levels. Most producers would agree that weather is the largest factor affecting production. It can be too hot, too wet or too cold for at least a portion of nearly every year. Add hail, wind, snow or frost,

and the risks from weather clearly become significant.

Farmers have used a variety of strategies to reduce production risks, including irrigation, crop rotation, summer fallow, variety selection, seeding population, reduced tillage, proper fertility levels, herbicides, insecticides, vaccination, genetic selection, livestock facility design, and enterprise diversification.

This brochure will discuss

some of the insurance products that have been created to also assist with production risk. It is not intended to provide specific advice but is intended to help producers understand more fully how insurance might be used to lessen the risks of farming.

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Special points of interest:

- *Production levels have increased over the past 25 years but profit margins have declined over the same period.*
- *Crop Revenue Coverage (CRC) insures both production and price.*
- *There is a federal subsidy for both CRC and Multi Peril Crop Insurance.*

Production Level Example

Production level is a key factor in determining the profitability of farmers and ranchers. Production levels have steadily increased during the past

twenty-five years while profit margins have been in a steady decline for the same period. This is due, in part, to the dramatic increase in production

expenses. The example below shows how production level (yield) is critical to production costs/bushel and the potential for profit.

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<u>Yield</u>	<u>Production Costs/Acre</u>	<u>Production Costs/Bushel</u>
125 Bu/Acre	\$250/Acre	\$2.00/Bushel
100 Bu/Acre	\$250/Acre	\$2.50/Bushel
75 Bu/Acre	\$250/Acre	\$3.33/Bushel
50 Bu/Acre	\$250/Acre	\$5.00/Bushel

Insurance

Insurance has emerged as a method of transferring or minimizing production risks. Insurance products are ever-changing. They range from products that insure against production loss caused by a specific peril, such as hail, wind, or fire, to multi-peril products, such as federal crop insurance.

Crop-Hail insurance pays a production loss if that loss was caused specifically by hail and only hail. Coverage level is based on a \$/Acre of coverage. The percent loss is estimated by an insurance adjuster and the percent loss is then multiplied by the \$/Acre of purchased coverage.

APH-MPCI (Actual Production History— Multi Peril Crop Insurance) establishes a coverage level by determin-

ing a yield guarantee based on a percentage of the actual production history. APH —MPCI pays an indemnity only if there is a loss in production due to any covered peril below the percentage of coverage chosen by the farmer. The bushel loss is then multiplied by an established price to determine the amount of the indemnity paid. APH-MPCI and CRC are federally subsidized programs. Premium subsidy levels range from 67% paid by the government at 50% coverage to 38% subsidy at 85% coverage.

CRC (Crop Revenue Coverage) insures both production and price. This product is a true revenue, or \$/Acre, guarantee. Loss can result from reduced production due to any covered

peril, or from reduced price, or from a combination of price and production. Coverage is determined by choosing the percent of APH the producer wants to guarantee, multiplied by either the planting price or the harvest price, whichever is higher. The “planting price” is the February average of the December board for corn and the November board for beans. “Harvest price” is the October average of the December board for corn and the November board for beans. There are also differently established prices for other crops, such as wheat and oats. Indemnity results when the actual yield multiplied by the harvest price results in \$/acre less income than the revenue guarantee.

Table 1, Net Coverage Level/Acre, does not show a great difference between the three insurance products, but keep in mind that coverage level is only part of the story. The perils that cause the covered losses are much different. With a Crop Hail insurance policy, covered losses are those production losses caused only by hail. An APH —MPCI policy would cover losses from hail but would also include coverage for many other production risks such as drought and wind. A CRC policy would cover all losses included in the APH — MPCI policy and, in addition, would cover price risk.

Crop — Hail

$\$/\text{acre coverage} - \text{premium} = \text{Net } \$/\text{Acre}$

$\$200 - \$5.00 = \mathbf{\$195/\text{Acre}}$

APH—MPCI

$\text{APH} \times [\% \text{ coverage}] = \text{yield guarantee/acre}$

$[\text{Yield guarantee}] \times [\text{established price}] = \$/\text{acre coverage}$

$[\$/\text{acre coverage}] - \text{premium} = \text{net } \$/\text{acre}$

$128 \times 75\% \times \$2.20 = \$211.20 - \$6.00 = \mathbf{\$205.20/\text{acre}}$

CRC

$\text{APH} \times [\% \text{ coverage}] = \text{yield guarantee/acre}$

$[\text{Yield guarantee/acre}] \times [\text{planting price or harvest price, whichever is higher}] = \text{revenue guarantee/acre}$

$[\text{Revenue guarantee/acre}] - \text{premium} = \text{net } \$/\text{acre}$

$128 \times 75\% \times \$2.40 = \$230.40 - \$8.50 = \mathbf{\$221.90/\text{acre}}$

Table 2, Net Indemnity Payment/Acre Calculation Method, demonstrates the indemnity generated by a 40% reduction in yield due to hail damage and a \$2.40 planting price and a \$2.00/bu harvest price. Each insurance product covers a different set of risks and therefore pays an indemnity based on losses as calculated below.

Crop — Hail [% loss established by adjuster] x [\$/Acre coverage] -- premium/acre = net\$/acre
 $40\% \times \$200 - \$5.00 = \mathbf{\$75.00/acre}$

APH— MPCI APH x [% coverage] = yield guarantee/acre
[Yield guarantee/acre] — [actual yield/acre = yield loss/acre
[Yield loss/acre] x [established price] = indemnity/acre
Indemnity/acre — premium/acre = net\$/acre
 $128 \times 75\% = 96 - 76.8 = 19.2$
 $19.2 \times \$2.20 - \$6.00 = \mathbf{\$36.24/acre}$

CRC APH x [% coverage] = yield guarantee/acre
[yield guarantee/acre] x [planting price or harvest price, whichever is higher]
= revenue guarantee/acre
[harvest price] x [actual yield/acre] = calculated revenue/acre
[revenue guarantee/acre] - [calculated revenue/acre] = indemnity/acre
[indemnity/acre] - [premium/acre] = net\$/acre
 $128 \times 75\% = 96 \times \$2.40 = \mathbf{\$230.40}$



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Table 3, Net \$/Acre Indemnity, illustrates the different types of coverage and the indemnity paid by each. Notice that only under Situation A does Crop—Hail pay an indemnity. The payment of \$75/Acre is the largest and the premium, in this example, is the smallest of the three types of policies. If your production risks are primarily associated with hail you may want to consider a Crop — Hail policy.

The APH — MPCCI policy paid a modest \$36.24 under both Situations A and B. Although not as high an indemnity as Crop — Hail, it did pay under both circumstances that resulted in a yield loss of more than 25%. An APH — MPCCI policy may be a good value, especially during years when the USDA established price is comparatively high. Remember there is a federal subsidy for both APH — MPCCI and CRC.

The CRC policy paid off under all situations, \$68.30 under both Situations A and B. Part of the indemnity was generated by the reduced yield and part by the reduction in harvest price to \$2.00/bu. Under Situation C, the CRC policy paid \$17.10/acre, the only indemnity paid under Situation C. Even though the yield loss was only 20%, the combination of lower yield and lower price triggered a reduction in revenue and thus a payment. A CRC policy is the only insurance available to Nebraskans that not only transfers the risk of production, but also helps to insure a price.

Table 3 Assumptions:

APH	128 bushels/acre
MPCI Established Price	\$2.20/bushel (estimated)
CRC Planting Price	\$2.40/bushel (estimated)
CRC Harvest Price	\$2.00/bushel (estimated)
Crop Hail Premium	\$5.00/acre (estimated)
APH-MPCI Premium	\$6.00/acre (estimated)
CRC Premium	\$8.50/acre (estimated)
% Coverage	75%

Net Coverage/Acre Levels from Table 1

Situation A: 40% Loss due to Hail

Situation B: 40% Loss other Insured Peril

Situation C: 20% Loss other Insured Peril

Table 3: Net\$/Acre Indemnity

	<u>Situation A</u>	<u>Situation B</u>	<u>Situation C</u>
Crop-Hail	\$75.00/Acre	\$0/Acre	\$0/Acre
APH-MPCI	\$36.24/Acre	\$36.24/Acre	\$0/Acre
CRC	\$68.30/Acre	\$68.30/Acre	\$17.10/Acre