

# Risk Management Education for Irrigated & Targeted Commodities

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*Risk Management Agency & Billings Regional Office*  
*Mountain States Beet Growers Marketing Association of MT*  
*MSU Cooperative Extension Service*



**Worland, Powell,  
Wyoming**

**November 21-22, 2002**



# WORKSHOP OUTLINE

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1. **Pre-Test**
2. **Production Risk**
  - a. **MPCI & CRC Insurance Products**
  - b. **Specific Crops**
3. **Diversification Issues**
  - a. **Price Risk**
  - b. **Diversification**
4. **Product Availability**
5. **Farm Bill Issues**
6. **Evaluation**

# WORKSHOP OUTLINE

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1. Pre-Test
2. Production Risk
  - a. MPCCI & CRC Insurance Products
  - b. Specific Crops
3. Diversification Issues
  - a. Price Risk
  - b. Diversification
4. Product Availability
5. Farm Bill Issues
6. Evaluation

# **PRODUCTION RISK OUTLINE**

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- 1. Definitions**
- 2. Insurable Units**
- 3. Actual Production History (APH)**
- 4. Multiple Peril Crop Insurance**
- 5. CRC Insurance**
- 6. Specific Crops**
  - a. Sugarbeets**
  - b. Dry Beans**
  - c. Malting Barley**
- 7. General Crop Insurance Issues**

# PRODUCTION RISK OUTLINE

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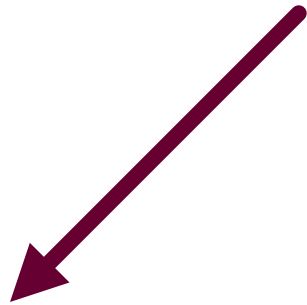
1. **Definitions**
2. **Insurable Units**
3. **Actual Production History (APH)**
4. **Multiple Peril Crop Insurance**
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  - a. **Sugarbeets**
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  - c. **Malting Barley**
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# Production Risk Management Options

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**Choices When RMA**

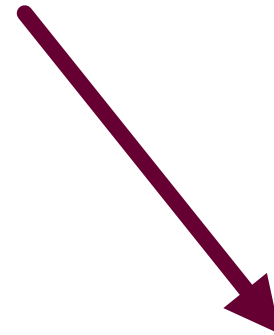
**Offerings Are Available**



**Self-Insure**



**Single-Peril  
Insurance**



**RMA Multiple  
Peril Offerings**

# RMA Insurance Categories

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## Two Broad Categories



1. Yield Insurance
  - a. Indemnities Paid When Per Acre Yields Are Low
  
2. Revenue Insurance
  - a. Indemnities Paid When Per Acre Revenue Is Low

# RMA Insurance Categories

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	<b>Individual Farm Plans (APH)</b>	<b>Group Plans (County Yield/Revenue)</b>
<b>Yield Insurance</b>	<b>MPCI</b>	<b>GRP</b>
<b>Revenue Insurance</b>	<b>IP</b> <b>CRC, RA, AGR</b>	<b>GRIP</b>



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# **Insurable Units**

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**May Be Able To Insure Different Areas  
Within A County  
Under Different Contracts**

1. **Optional Units**

a. **Land In Different Sections**

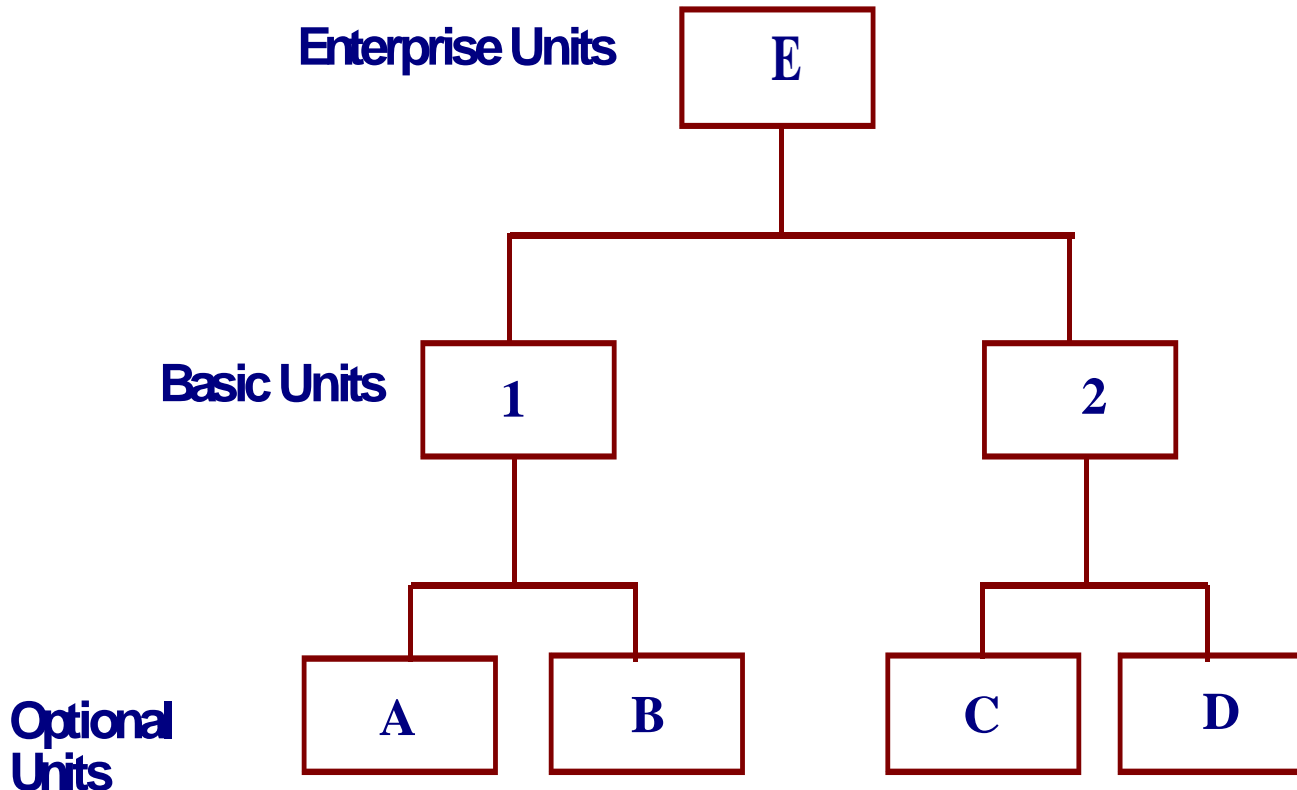
2. **Basic Units**

a. **Land Operated Under Same  
Cost/Share Arrangements**

3. **Enterprise Units**

a. **All Of Your Land In The County<sup>10</sup>**

# Insurable Units Pyramid



All four farms are in the same county.

A & B are operated under 100% crop share (may be owned or cash leased) but in separate sections.

C is leased from a landlord – 1/3 crop share.

D is leased from a different landlord – 1/3 crop share.

# Comparing Optional And Basic Units (MPCI)

<b>Contract Data</b>	<b>Optional Unit A</b>	<b>Optional Unit B</b>	<b>Basic Unit</b>
<b>Unit Size</b>	<b>100 acres</b>	<b>100 acres</b>	<b>200 acres</b>
<b>APH Yield</b>	<b>100 bushels</b>	<b>100 bushels</b>	<b>100 bushels</b>
<b>Coverage</b>	<b>70%</b>	<b>70%</b>	<b>70%</b>
<b>Trigger Yield</b>	<b>70 bushels</b>	<b>70 bushels</b>	<b>70 bushels</b>
<b>Elected Price</b>	<b>\$2/bushel</b>	<b>\$2/bushel</b>	<b>\$2/bushel</b>

# Problem 1: Comparing Optional And Basic Units

	Optional Unit A	Optional Unit B	Basic Unit
Trigger Yield	70 bushels	70 bushels	70 bushels
Elected Price	\$2/bushel	\$2/bushel	\$2/bushel
Unit Size	100 acres	100 acres	200 acres
Actual Yield Per Acre	60 bushels	80 bushels	
Per Acre Bushel Indemnity			
Total Dollar Indemnity			

# Problem 1: Comparing Optional And Basic Units

	Optional Unit A	Optional Unit B	Basic Unit
Trigger Yield	70 bushels	70 bushels	70 bushels
Elected Price	\$2/bushel	\$2/bushel	\$2/bushel
Unit Size	100 acres	100 acres	200 acres
Actual Yield Per Acre	60 bushels	80 bushels	70
Per Acre Bushel Indemnity	10	0	0
Total Dollar Indemnity	\$2,000	0	0

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# **Actual Production History**

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## **Producers Must Establish APH For MPCI and CRC**



- 1. APH Must Be Established On Each Insurable Unit**
- 2. Based on Historical Proven Yields For The Past 4 to 10 Years**
- 3. This History Must Be For Consecutive Years**
- 4. Must Start With Most Recent Crop Year**



# Establishing An APH When Records Are Available

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Year	Producer A	Producer B
1993	--	104
1994	--	80
1995	--	60
1996	--	86
1997	--	105
1998	--	60
1999	90	90
2000	60	60
2001	75	75
2002	50	50
<b>APH Yield</b>	<b>69</b>	<b>77</b>

# Incomplete APH History

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1. **If You Have Less Than 4 Years Of Proven Yields**
  - a. **A Transition Yield (T-Yield) Is Established**
  - b. **Similar To The County Average**
2. **If You Are Unable To Supply Any Proven Production Information**
  - a. **Limited To 65% Of The T-Yield**<sup>18</sup>

# Incomplete APH History

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3. **If You Have Proven Yields For Only One Year**
  - a. **Can Use 80% Of The T-Yield For The Other Three Years**
4. **If You Have Proven Yields For Only Two Years**
  - a. **Can Use 90% Of The T-Yield For The Other Two Years**
5. **If You Proven Yields For Three Years**
  - a. **Can Use 100% Of The T-Yield For The Missing Year**

# Establishing An APH When Records Are Not Complete

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Year	Producer C	Producer C		Producer D	Producer D
1999	N.A.			N.A.	
2000	60	60		N.A.	
2001	75	75		N.A.	
2002	50	50		N.A.	
APH Yield	??			??	

# Establishing An APH When Records Are Not Complete

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Year	Producer C	Producer C		Producer D	Producer D
1999	N.A.			N.A.	
2000	60	60		N.A.	
2001	75	75		N.A.	
2002	50	50		N.A.	
APH Yield	??			??	

**If The County T-Yield Was 80 Bushels Per Acre**

# Establishing An APH When Records Are Not Complete

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Year	Producer C	Producer C		Producer D	Producer D
1999	N.A.	80		N.A.	
2000	60	60		N.A.	
2001	75	75		N.A.	
2002	50	50		N.A.	
APH Yield	??	66		??	

*If The County T-Yield Was 80 Bushels Per Acre*

**Producer C: 100% Of 80 Bushels (1999)**

# Establishing An APH When Records Are Not Complete

Year	Producer C	Producer C		Producer D	Producer D
1999	N.A.	80		N.A.	52
2000	60	60		N.A.	52
2001	75	75		N.A.	52
2002	50	50		N.A.	52
APH Yield	??	66		??	52

*If The County T-Yield Was 80 Bushels Per Acre*

**Producer D: 65% Of 80 Bushels (All Years)**

# APH Yields And Low Yields

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1. **If You Have Had Some Years With Unusually Low Yields**
  - a. **You Can Replace Those Years With 60% Of The T-Yield**



# APH Yields And Low Yields

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Year	Producer E	Producer E
1993	104	104
1994	80	80
1995	15*	48
1996	86	86
1997	105	105
1998	25*	48
1999	90	90
2000	60	60
2001	75	75
2002	20*	48
APH Yield	66	74

**If The County T-Yield Was 80 Bushels Per Acre**

**Producer E: 60% Of 80 Bushels (1995, 1998, 2002)**

# PRODUCTION RISK OUTLINE

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# MPCI

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1. **Original FCIC, Subsidized Crop Insurance**
2. **Producer Establishes An APH**
3. **Producer Chooses A Yield Election**
  - a. **50%-75% (Or 85%) Of APH**
4. **Producer Chooses A Price Election**
  - a. **30%-100% Of FCIC Forecasted Harvest Price**
5. **Premium Equals The Maximum Indemnity Multiplied By The Premium Rate**

# MPCI Example

<b>Contract Data</b>	<b>Value</b>	<b>Calculation</b>
<b>APH Yield</b>	<b>100 bu.</b>	
<b>Yield Election</b>	<b>70%</b>	
<b>Trigger Yield</b>	<b>70 bu.</b>	<b>0.70 x 100 bu.</b>
<b>FCIC Price Forecast</b>	<b>\$2.50/bu.</b>	
<b>Price Election</b>	<b>80%</b>	
<b>Elected Price</b>	<b>\$2.00/bu.</b>	<b>0.80 x \$2.50</b>
<b>Maximum Indemnity</b>	<b>\$140</b>	<b>70 bu. x \$2.00</b>
<b>Premium Rate</b>	<b>6%</b>	
<b>Premium</b>	<b>\$8.40/ac.</b>	<b>0.06 x \$140</b>

# MPCI Example

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1. **Suppose You Actually Harvest 50 Bushels Per Acre**  

2. **Will You Receive An Indemnity?**
3. **If So, Calculate The Indemnity In Bushels/Acre**
4. **Calculate The Indemnity In Dollars/Acre**

# MPCI Example

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**1. Suppose You Actually Harvest 50 Bushels Per Acre**



**2. You Receive An Indemnity Because 50 Bushels Is Less Than Your Trigger Yield of 70 Bushels.**

**3. You Receive The Difference In Bushels**

**a.  $70 - 50 = 20$  Bushels/Acre**

**4. Valued At Your Elected Price**

**a.  $20 \times \$2.00 = \$40/\text{Acre}$**

# PRODUCTION RISK OUTLINE

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# CRC Insurance

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1. **Can Insure Optional, Basic, Or Enterprise Units**
2. **Producer Establishes An APH For Each Unit**
3. **Producer Chooses A Coverage Election**
  - a. **50%-75% (or 85%)**
4. **FCIC Establishes A “*Projected Harvest Price*”**
5. **Producer Chooses 95% or 100% Price Election**



# CRC Insurance

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## 6. Minimum Revenue Guarantee

a. APH Yield x Coverage Election  
x FCIC Projected Harvest Price x  
Price Election

## 7. Producer Receives An Indemnity When

a. Actual Yield Multiplied By The  
FCIC Actual Harvest Price Is Less  
Than The Minimum Revenue  
Guarantee

# CRC Insurance

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8. **Producer Minimum Revenue Guarantee Is Adjusted Upward If**
  - a. **FCIC “Actual” Harvest Price Is Greater Than The FCIC “Projected” Harvest Price**
9. **CRC Insurance Results In**
  - a. **Downward Yield Protection**
  - b. **Downward Price Protection**
  - c. **Upward Price Participation**

# CRC Example

<b>Contract Data</b>	<b>Value</b>	<b>Calculation</b>
<b>APH Yield</b>	<b>140 bu.</b>	<b>N.A.</b>
<b>Coverage Election</b>	<b>70%</b>	<b>N.A.</b>
<b>FCIC Price Forecast</b>	<b>\$2.10/bu.</b>	<b>N.A.</b>
<b>Price Election</b>	<b>95%</b>	<b>N.A.</b>
<b>Minimum Revenue Guarantee?</b>		

# CRC Example

<b>Contract Data</b>	<b>Value</b>	<b>Calculation</b>
<b>APH Yield</b>	<b>140 bu.</b>	<b>N.A.</b>
<b>Coverage Election</b>	<b>70%</b>	<b>N.A.</b>
<b>FCIC Price Forecast</b>	<b>\$2.10/bu.</b>	<b>N.A.</b>
<b>Price Election</b>	<b>95%</b>	<b>N.A.</b>
<b>Minimum Revenue Guarantee?</b>	<b>\$195.50</b>	<b>140 bu. X 0.70 x \$2.10 x 0.95</b>

# CRC Example 1: Price Constant

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1. **Suppose You Actually Harvest 75 Bushels Per Acre (Yield Protection)**
2. **Suppose The Actual FCIC-Determined Harvest Price Is \$2.10/bushel**
3. **What Is Your “Crop Value”?**
4. **Will You Receive An Indemnity?**
5. **If So, Calculate The Indemnity**

# CRC Example 1: Price Constant

---

1. **Suppose You Actually Harvest 75 Bushels Per Acre (Yield Protection)**
2. **Suppose The Actual FCIC-Determined Harvest Price Is \$2.10/bushel**
3. **Your “Crop Value” Is**
  - a.  **$75 \text{ bu} \times \$2.10 = \$157.50/\text{Acre}$**
4. **You Receive An Indemnity Of \$38/Acre Because \$157.50/Acre Is Less Than \$195.50/Acre**
  - a.  **$\$195.50 - \$157.50 = \$38/\text{Acre}$**

# CRC Example 2: Price Decrease

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1. **Suppose You Actually Harvest 140 Bushels Per Acre (Price Protection)**
2. **But, The Actual FCIC-Determined Harvest Price Decreased To \$1.25/bushel (Rather Than The Expected Harvest Price of \$2.10/bu.)**
3. **What Is Your “Crop Value”?**
4. **Will You Receive An Indemnity?**
5. **If So, Calculate The Indemnity**

# CRC Example 2: Price Decrease

---

1. **Suppose You Actually Harvest 140 Bushels Per Acre (Price Protection)**
2. **But, The Actual FCIC-Determined Harvest Price Decreased To \$1.25/bushel (Rather Than The Expected Harvest Price of \$2.10/bu.)**
3. **Your “Crop Value” Is**
  - a.  **$140 \text{ bu} \times \$1.25 = \$175/\text{Acre}$**
4. **You Receive An Indemnity Of \$20.50/Acre**
  - a.  **$\$195.50 - \$175 = \$20.50\text{Acre}$**



# CRC Example 3: Price Increase

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1. **Suppose You Actually Harvest 75 Bushels Per Acre (Price Participation)**
2. **But, The Actual FCIC-Determined Harvest Price Increased To \$2.50/bushel (Rather Than The Projected Harvest Price of \$2.10/bu.)**
3. **What Is Your New Minimum Revenue Guarantee?**
4. **What Is Your Crop Value?**
5. **Calculate Your Indemnity (If Any)**

# CRC Example 3: Price Increase

---

1. **Suppose You Actually Harvest 75 Bushels Per Acre (Price Participation)**
2. **But, The Actual FCIC-Determined Harvest Price Increased To \$2.50/bushel (Rather Than The Projected Harvest Price of \$2.10/bu.)**
3. **What Is Your New Minimum Revenue Guarantee?**
  - a.  **$140 \times 0.70 \times \$2.50 \times 0.95 = \$232.75/\text{Acre}$**

# CRC Example 3: Price Increase

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4. What Is Your Crop Value?

a.  $75 \times \$2.50 = \$187.50$

5. Calculate Your Indemnity

a.  $\$232.75 - \$187.50 = \$45.25/\text{Acre}$

6. If The Price Increase Was Not Considered

a. You Would Have Received  
 $\$38/\text{Acre}$

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7. **General Crop Insurance Issues**

# **Sugarbeets: MPCCI**

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- 1. Insurable Units**
  - a. Must Insure All Your Acres In A County (But, They May Be Under Different Contracts)**
  - b. May Insure Under Optional, Basic, or Enterprise Units**
- 2. Yield Election -- 50%-85%**
- 3. Price Election For All Acres**
  - a. 30%-100% FCIC Projected Price**
  - b. Indemnity Based On Expected Sugar Production**

# Sugarbeets: MPCCI

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## 4. Replant Option

- a. **Payment Occurs If Remaining Stand Cannot Produce 90% of Trigger Yield**
- b. **Payment Becomes The Lesser Of**
  - **1 Ton Of Beets/Acre**
  - **10% Of Trigger Yield (For Trigger Yields Less Than 10 Tons/Acre)**
  - **Probably Not Applicable In This Area**

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# Dry Beans: MPCCI

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1. **Insurable Units**
  - a. **Must Insure All Your Acres In A County (But, They May Be Under Different Contracts)**
  - b. **May Insure Under Optional, Basic, or Enterprise Units**
  - c. **May Insure By Type (Variety)**
    - **Different Prices**
2. **Yield Election -- 50%-75%**
3. **Price Election For All Acres**
  - a. **30%-100% FCIC Price**



# Dry Beans: MPCCI

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## 4. Replant Option

- a. Payment Occurs If Remaining Stand Cannot Produce 90% of Trigger Yield
- b. Payment Becomes The Lesser Of
  - 120 Pounds Per Acre
  - 10% Of Trigger Yield

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# Malting Barley: MPCFI

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1. **You First Purchase A Feed Barley Contract**
2. **You Make Decisions Regarding**
  - a. **Units**
  - b. **Yield Election**
  - c. **Price Election**
3. **You May Elect To Purchase A Malting Barley Rider**
  - a. **Option A: Non-Contracted Malting Barley**
  - b. **Option B: Contracted Malting Barley**

# Malting Barley: MPCFI

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4. Rider Applies To ALL Bushels Contracted For Delivery Regardless Of Selected Units
5. Indemnity Is Paid For Any Undelivered Bushels Below Your Trigger Yield
6. Option B: Indemnities Valued As
  - a. The Difference Between Malting Barley Contract Price and The FCIC Feed Barley Price Forecast (Adjusted For Quality)

# MPCI Example 1

## Malting Barley: Option B

	Value	Calculation
APH Yield	100 bu.	
Yield Election	70%	
Trigger Yield	70 bu.	$0.70 \times 100 \text{ bu.}$
FCIC Price Forecast	\$2.50/bu.	
Price Election	80%	
Elected Price	\$2.00/bu.	$0.80 \times \$2.50$
Option B Rider	10,000 bu.	$100 \text{ ac} \times 100 \text{ bu}$
Contract Price	\$3.50/bu.	

# **MPCI Example 1**

## **Malting Barley: Option B**

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- 1. Suppose You Actually Harvest 50 Bushels Per Acre (Makes Malt)**
- 2. You Receive An Indemnity For The Difference In Bushels**
  - a.  $70 - 50 = 20$  Bushels/Acre**
- 3. Valued At Your Feed Barley Price Election**
  - a.  $20 \times \$2.00 = \$40/\text{Acre}$**
  - b. Total =  $\$40 \times 100 \text{ Acres} = \$4,000$**

# **MPCI Example 1**

## **Malting Barley: Option B**

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- 4. You Were Only Able To Deliver 5,000 Bushels (50 bu/ac x 100 acres)**
- 5. Malting Barley Indemnity Is Based On Your Yield Election (70% Of 10,000 bu.)**
  - a.  $7,000 - 5,000 = 2,000$  Bushels**
  - b. Those Bushels Are Valued As The Difference Between The The Malting Barley Contract Price and The FCIC Feed Barley Price Forecast (Quality Adjusted)**

# MPCI Example 1

## Malting Barley: Option B

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6. Your Malting Barley Indemnity Is:

a.  $\$3.50 - \$2.50 = \$1.00/\text{bu.}$

b.  $\$1/\text{bu} \times 2,000 \text{ bu.} = \$2,000$

7. Total Indemnity Is:

a.  $\$4,000 + \$2,000 = \$6,000 (\$60/\text{ac})$



# **MPCI Example 2**

## **Malting Barley: Option B**

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- 1. Suppose You Actually Harvest 100 Bushels Per Acre**
  - a. All Rejected For Malt (Thins)**
- 2. Will You Receive A Feed Barley Indemnity?**
  - a. If So, Calculate The Indemnity**
- 3. Will You Receive A Malting Barley Indemnity?**
  - a. If So, Calculate The Indemnity**<sup>57</sup>

# **MPCI Example 2**

## **Malting Barley: Option B**

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- 1. Suppose You Actually Harvest 100 Bushels Per Acre**
  - a. All Rejected For Malt (Thins)**
- 2. You Receive No Indemnity For Feed Barley (100 bu. > 70 bu.)**
- 3. Your Malting Barley Indemnity Is:**
  - a. 7,000 Bushels Valued As The Difference Between The Malting Barley Contract Price And The FCIC Feed Barley Price Forecast (Quality Adjusted)**

# MPCI Example 2

## Malting Barley: Option B

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4. Your Malting Barley Indemnity Is:
  - a.  $\$3.50 - \$2.50 = \$1.00/\text{bu.}$
  - b.  $\$1/\text{bu.} \times 7,000 \text{ bu.} = \$7,000$
5. Total Indemnity Is \$7,000
  - a. Or \$70/Acre

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# Crop Insurance Issues

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1. **If You Insure Irrigated Barley, You Have To Insure Your Dryland Barley**
  - a. **However, They Are Different Contracts**
2. **Usually, Though Not Always, Want to Insure Smaller Units**
3. **You Pay More For Smaller Units And Lower Deductibles**
4. **CRC Is *Generally* More Expensive Than MPC**
  - a. **Provides More Risk Management**

# Crop Insurance Issues

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5. **Why Are You Buying Insurance?**
  - a. **How Much Protection Do You Need?**
  - b. **Trying To Maximize Indemnities May Not Be An Optimal Strategy**
6. **Compare Premiums And Protection Across Products And Counties**

# QUESTIONS?

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