

Risk Management Strategies Utilizing Combo Insurance Plans, Futures & Options

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Profitable & Sustainable
AGRICULTURAL SYSTEMS
UW Cooperative Extension Service



<http://www.montana.edu/softwaredownloads/financialmgtdownloads.html>



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Analysis Software --- Written by:

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Two Case Farm Examples

- **Winter Wheat**
 - Hill County dry land with crop fallow rotation
 - APH yield is 50 bu. per acre
 - Producer selected 75% yield coverage level
 - RMA Projected Harvest Price is **\$8.79** per bu.
 - Premiums: YP = \$21.20, RP-HPE = \$22.95, RP = \$26.89
- **Sprint Wheat**
 - Hill County dry land with crop fallow rotation
 - APH yield is 40 bu. per acre
 - Producer selected 75% yield coverage level
 - RMA Projected Harvest Price is **\$8.44** per bu.
 - Premiums-75% YP = \$15.67, RP-HPE = \$16.24, RP = \$18.28



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Three Combo Plan Trigger Levels

- Yield Trigger Level
- RMA Projected Harvest Price
- RMA Harvest Price

- All possible Combinations of these Triggers



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Risk Management Strategies

- Combo Plans (Yield and Price)
 - YP, RP-HPE, RP
- Traditional Marketing Tools (Price Only)
 - Hedge, Puts, Calls
 - Combinations of Traditional Marketing Tools
- Combinations of Insurance and Traditional tools
 - Explore the Coverage Gaps
- Combo Plans **versus** Traditional Tools



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Yield Protection (YP)

- Yield Protection plan of insurance replaces APH plan of insurance
 - For crops with Commodity Exchange price discovery
- Uses **RMA Projected Harvest Price** to determine insurance coverage
 - RMA average of futures prior to sales closing date
 - Futures market used and time period averaged varies by commodity and location



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YP Guarantee for Base Case –Winter Wheat

- APH yield is 50 bushels
- Yield coverage level selected is 75%
 - Yield coverage level is 37.5 bushels
- **RMA Projected Harvest Price** is \$8.79
- Revenue Guarantee is
 - $\$8.79 \times 50 \text{ bu.} \times 75\% = \mathbf{\$329.63}$
- Indemnity payments received only when yield falls below 37.5 bu. ($50 * 75\%$)
- Price is locked in at \$8.79



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Revenue Protection with Harvest Price Exclusion (RP-HPE)

- Revenue guarantee established using **RMA Projected Harvest Price** and producer selected yield coverage level
- Indemnity payment is triggered with any combination of yield and price below the revenue guarantee:
 - Actual yield above or below the yield coverage level selected **times**
 - RMA Projected Harvest Price (locked in)



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Our Base Case for RP-HPE – Winter Wheat

- RMA Projected Harvest Price is \$8.79 for WW
- APH yield is 50 bushels
- Yield election is 75%
- **Guarantee** is $\$8.79 \times 75\% \times 50 = \mathbf{\$329.63}$



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Revenue Protection (RP)

- Allows increase in the revenue guarantee if the **RMA Harvest Price** increase above the **RMA Projected Harvest Price**
 - Guarantee based on the higher these two components
- Indemnity payment triggered with any combination of price and actual yield less than the revenue guarantee
 - Price is higher of **RMA Projected Harvest Price** **or** **RMA Harvest Price** capped @ 200% of Projected Harvest Price
 - Yield = Actual yield



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Revenue Protection (RP) – Winter Wheat

- RP has minimum and maximum levels
 - **RMA Projected Harvest Price** times APH Yield times coverage level selected.
 - Established prior to sales closing date for each commodity
 - \$8.79 times 50 times 75% = **\$329.63** per acre
 - **RMA Harvest Price** times producers actual yield
 - Capped at 200% of the RMA Projected Harvest Price
 - \$17.58 times 50 bushels times 75% = **\$659.25** maximum per acre guarantee



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Spring Wheat Case Farm Numbers



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YP Guarantee for Base Case - Spring Wheat

- APH yield is 40 bushels
- Yield coverage level selected is 75%
 - Yield coverage level is 30 bushels
- **RMA Projected Harvest Price** is \$8.44
- Revenue Guarantee is
 - $\$8.44 \times 40 \text{ bu.} \times 75\% = \mathbf{\$253.20}$
- Indemnity payments received only when yield falls below 30 bu. ($40 * 75\%$)
- Price is locked in at \$8.44



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Our Base Case for RP-HPE – Spring Wheat

- RMA Projected Harvest Price is \$8.44 for Spring Wheat
- APH yield is 40 bushels
- Yield election is 75%
- **Guarantee** is $\$8.44 \times 75\% \times 40 = \mathbf{\$253.20}$



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Revenue Protection (RP) – Spring Wheat

- RP has minimum and maximum levels
 - **RMA Projected Harvest Price** times APH Yield times coverage level selected.
 - \$8.44 times 40 times 75% = **\$253.20** per acre
 - **RMA Harvest Price** times producers actual yield
 - Capped at 200% of the RMA Projected Harvest Price
 - \$16.88 times 40 bushels times 75% = **\$506.40** maximum guarantee per acre



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WW – Combo, Futures, Options Risk Management Case Farm

SW – Combo, Futures, Options Risk Management Case Farm

Exploring the Software

- A number change anywhere changes that number everywhere.
- Set all ***Plan*** premiums to zero
- Set RMA Harvest Price above and below RMA Project Harvest Price
- Vary yields at all price levels
 - Where does RP pay above chosen yield level
- Use Buy Up Calculator
 - Adjust Yield coverage level selected