Integrating Crop Insurance and Marketing Plans

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Two Different “Schools of Thought”

• Crop marketing plans and crop insurance choices are two separate decisions and are not connected.

• Crop marketing plans and crop insurance choices must be coordinated to develop appropriate risk management plans.
Which is right?
Which bushels does crop insurance cover?
Which bushels does a marketing plan cover?
Assume 120 bu./a. APH and 70% Yield Coverage
Which bushels are covered?

70 % Yield Insurance
Which bushels are covered?

70% Yield Insurance

<table>
<thead>
<tr>
<th>Bushel per Acre</th>
<th>Crop Insurance</th>
<th>Marketing Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60.0</td>
<td>84.0</td>
<td></td>
</tr>
<tr>
<td>80.0</td>
<td>84.0</td>
<td></td>
</tr>
<tr>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>120.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Insured
- Not Covered
Which bushels are covered?

70% Yield Insurance

Crop Insurance

Insured: 84.0 Bushel per Acre

Not Covered: 36.0 Bushel per Acre

Marketing Plan
Which bushels are covered?

70% Yield Insurance

- Not Covered: 36.0
- Insured:
  - Phase 1: 30.0
  - Phase 2: 30.0
  - Phase 3: 30.0
  - Phase 4: 30.0
Which bushels are covered?

70% Yield Insurance

Crop Insurance

Bushel per Acre

Not Covered

Insured

Marketing Plan

Phase 1
30.0

Phase 2
30.0

Phase 3
30.0

Phase 4
30.0
Which bushels are covered?

70% Yield Insurance

Crop Insurance

Marketing Plan

Not Covered

Insured

Phase 1

Phase 2

Phase 3

Phase 4
Which bushels are covered?

70% Yield Insurance

Bushels NOT Produced

Bushels Produced

Crop Insurance

Marketing Plan

Phase 1

Phase 2

Phase 3

Phase 4
How are these bushels priced?
How are bushels priced?

70% Yield Insurance
How are bushels priced?

70% Yield Insurance

Crop Insurance

Marketing Plan

Bushel per Acre

36.0

84.0

30.0

30.0

30.0

30.0

Not Priced
How are bushels priced?

70% Yield Insurance

Crop Insurance
Bushel per Acre

- 84.0
- 36.0

Marketing Plan
Bushel per Acre

- 30.0
- 30.0
- 30.0
- 30.0

Not Priced

?
How are bushels priced?

70 % Yield Insurance

Bushel per Acre

Crop Insurance

Marketing Plan

Not Priced

Average Futures Price in February

36.0

30.0

30.0

30.0

30.0

84.0

0.0

100.0

120.0
How are bushels priced?

70% Yield Insurance

Crop Insurance

- Not Priced: 36.0
- Average Futures Price in February: 84.0

Marketing Plan

- 30.0
- 30.0
- 30.0
- 30.0
How are bushels priced?

70 % Yield Insurance

- Crop Insurance: 84.0
- Marketing Plan:
  - Not Priced: 36.0
  - Average Futures Price in February: 30.0
  - Fixed Contract: 30.0
  - Buy Option: 30.0
  - Futures Fixed Contract: 30.0
  - Cash Forward Contract: 30.0
  - Store and Wait: 30.0
Why do marketing consultants recommend forward pricing up to your crop insurance guarantee?
What does the yield distribution look like?

(see stochastic simulation)
Some marketing consultants will argue that the crop insurance indemnity payments can be used to help pay for cost of “getting out” of an over sold marketing plan.
What about Revenue Protection?
Revenue Protection Overview

• Considers both yield and price variation to estimate gross revenue guarantee.

• Yield: APH (actual production history)

• Price:
  – Projected Price = monthly average harvest futures price in February.
  – Harvest Price = monthly average harvest futures price before harvest.
## Price Discovery

### Commodity Exchange Price Provision

<table>
<thead>
<tr>
<th>Crop Insured</th>
<th>Exchange Used</th>
<th>Commodity Used</th>
<th>Contract Month</th>
<th>Projected Price Avg Daily Close</th>
<th>Harvest Price Avg Daily Close</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>CBOT</td>
<td>Corn</td>
<td>September</td>
<td>February(^2)</td>
<td>July(^2)</td>
</tr>
<tr>
<td>Canola</td>
<td>ICE</td>
<td>Canola</td>
<td>November</td>
<td>February(^3)</td>
<td>September(^3)</td>
</tr>
<tr>
<td>Corn</td>
<td>CBOT</td>
<td>Corn</td>
<td>December</td>
<td>February</td>
<td>October</td>
</tr>
<tr>
<td>Soybeans</td>
<td>CBOT</td>
<td>Soybeans</td>
<td>November</td>
<td>February</td>
<td>October</td>
</tr>
<tr>
<td>Sunflower</td>
<td>CBOT</td>
<td>Soy Oil</td>
<td>December</td>
<td>February(^4)</td>
<td>October(^4)</td>
</tr>
<tr>
<td>Spring Wheat</td>
<td>MGE</td>
<td>HRSW</td>
<td>September</td>
<td>February</td>
<td>August</td>
</tr>
</tbody>
</table>

**Notes:**

1. Harvest price has upper limit of two times projected price
2. Multiplied by factor determined by RMA
3. Quotes in Canadian dollars per metric ton are converted to U.S. dollars per pound
4. Divide each settlement price by two and add one cent
5. Same as spring wheat but multiplied by a factor determined by RMA
Revenue Protection Overview

• Revenue Guarantee = APH x higher of projected price or harvest price.

• Actual Revenue = Actual yield x harvest price.

• Indemnity Payment = Revenue Guarantee – Actual Revenue.
Revenue Protection Overview

• If average futures prices rise (harvest price is higher than projected price), bushels below yield guarantee are valued at the harvest price.

• If average futures prices fall (harvest price is lower than projected price), an average yield may result in an indemnity payment.

• Examples:
Revenue Protection Example #1

- $1.23/bu. decrease in price (26.6% decrease)
- 120 bu. APH and 70% coverage

- Revenue Guarantee = 120 bu. x $4.62 x 70% = $388.08
- Actual Revenue = 120 bu. x $3.39 = $406.80
- Indemnity = $406.80 – $339.00 = $0.00/acre
Revenue Protection Example #2

• 2014 Projected price for corn = $4.62/bu.
• 2014 Harvest price for corn = $3.39/bu.
• 120 bu. APH and 70% coverage

• Revenue Guarantee = 120 bu. x $4.62 x 70% = $388.08
• Actual Revenue = 100 bu. x $3.39 = $339.00
• Indemnity = $388.08 – $339.00 = $49.08/acre
2015 Revenue Protection

- 2015 Projected Prices = ????
- Current CBOT Dec 2015 Corn = $4.02/bu.
- Current MGEX Sep 2015 HRSW = $5.74

- 120 bu./a. corn APH = 120 bu. x $4.00 x 70% = $336.00/acre
Revenue Protection Example

Based on Estimated Revenue

Based on Marketing Plan

Gross Revenue

Dollars per Acre

108.00

68.00

40.00
Revenue Protection Example

Can this be enhanced?

Based on Marketing Plan

Gross Revenue

Dollars per Acre

- 108.00
- 90.00
- 68.00
- 40.00
How are bushels priced?

70% Yield Insurance

Crop Insurance

- 84.0
- 36.0
- Not Priced

Marketing Plan

- 30.0
- 30.0
- 30.0
- 30.0
- 30.0

Store and Wait
Buy Option
Futures Fixed Contract
Cash Forward Contract

Average Futures Price in February

Cash Forward Contract
How are bushels priced?

70% Yield Insurance

Bushel per Acre:
- 0.0
- 20.0
- 40.0
- 60.0
- 80.0
- 100.0
- 120.0

Crop Insurance:
- Not Priced
- 36.0
- 84.0

Marketing Plan:
- Store and Wait
- Buy Option
- Futures Fixed Contract
- Cash Forward Contract
- Can this be enhanced?
- 30.0
- 30.0
- 30.0
- 30.0
- 30.0
Questions?