Crop Insurance Options and Strategies for Row Crops in 2008

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GOALS TODAY

• Provide a basic overview of crop insurance alternatives for row crops in NC – corn, soybeans, wheat
• Provide a brief description of how these different insurance alternatives work
• Present some strategies to consider when choosing among the different insurance products

Introduction

• Crop insurance is one of the most important tool for managing risk in U.S. agriculture
• USDA-Risk Management Agency (RMA) introduced a number of different insurance products over the years
• Farmers have a several alternatives to choose from
Introduction

- Why is the choice of crop insurance product important?
- Each producer faces different kinds/levels of risk depending on their own situation
- Not properly addressing production risks has financial consequences
  - Affects your bottom line

Profit = (output price x output) - (input price x input)

Negative risks affect ability to:
- Pay bills
- Meet farm business goals
- Maintain lifestyle

Crop insurance is one strategy to manage production and/or price risk
- Yield-based and revenue-based plans
- Not costless – weigh premium (cost) with the expected risk reduction (benefits)
  - Assess your own situation
Introduction

- Need to find most appropriate crop insurance product(s) to properly address their own risk situation
- Information on the different products and how to evaluate them is valuable

Crop Insurance Alternatives for Row Crops in NC

- **Farm level Products**
  - Actual Production History (APH)
  - Catastrophic Coverage (CAT)
  - Crop Revenue Coverage (CRC)
  - Revenue Assurance (RA-BP/HP)
  - Indexed Income Protection (IIP)
  - Adjusted Gross Revenue – Lite (AGR-Lite)
- **County level Products**
  - Group Risk Plan (GRP)
  - Group Risk Income Plan (GRIP BP/HP)

Crop Insurance Alternatives for Row Crops in NC

- **Farm level Products**
  - Yield-based Insurance
    - APH
  - Revenue-based Insurance
    - Without guarantee increase
      - RA-BP (base price option) and IIP
    - With guarantee increase
      - RA-HP (harvest price option) and CRC
    - Multi-crop – AGR-Lite
Crop Insurance Alternatives for Row Crops in NC

- County level Products
  - County Yield-based
    • GRP
  - County Revenue-based
    • GRP-BP option
    • GRP-HP option

Crop Insurance Alternatives for Row Crops in NC

- For Revenue-based Products (not AGR-lite):
  - Base Price – price before planting (i.e. corn BP is Feb. ave. closing price for CBOT Dec. futures contract)
  - Harvest Price – price at harvest (i.e. corn HP is Nov. ave. closing price for CBOT Dec futures contract)

Crop Insurance Alternatives for Row Crops in NC

- For Revenue-based Products:
  - Products with guarantee increase allows revenue guarantee to be calculated using HP if HP > BP
  - Actual price received by producers NOT used in calculating your actual revenue
Crop Insurance Alternatives for Row Crops in NC

- Corn - APH, CRC, RA, IIP, GRP, GRIP
- Soybeans - APH, CRC, RA, IIP, GRP, GRIP
- Wheat - APH, CRC, GRP, GRIP
- Cotton - APH, CRC, GRP, GRIP

How Does It Work? APH Policy

- Insures farm-level yields
- Yield coverage – 50% to 85% of APH yield
- Price coverage – 60-100% of RMA price
- Unit coverage – Basic and Optional units
- Premiums – depends on county, unit, APH yield, yield and price coverage

How Does It Work? APH Example

- APH Yield Guarantee:
  - Approved APH Yield: 140 bu/ac
  - Coverage Level: 70%
  - Yield Guarantee: 98 bu/ac (140 bu/ac x 0.7)
How Does It Work? APH Example

- APH Indemnity Payment
  - Yield Guarantee: 98 bu/ac
  - Price Election (100%): $2.00/bu
  - Actual Yield: 88 bu/ac (88 < 98)
  - Indemnity*: $20/ac

  *(98 - 88) x $2 = $20

How Does It Work? RA-BP and IIP

- Insures farm-level revenue
- Rev. coverage – 50% to 85% (IIP up to 75%)
- Price coverage – Base Price
- Unit coverage – Basic, optional, enterprise, whole farm units; IIP – enterprise
- Premiums – depends on county, unit, APH yield, coverage level

How Does It Work? RA-BP and IIP

- *A note on IIP – same as the Income Protection Plan (IP) except that IIP is indexed to the county*
- APH yield in IIP used to calculate guarantee is different from actual APH yield (may be higher or lower)
- But the mechanism for payment is same with IP (and the example that follows)
How Does It Work? RA-BP/IIP Example

• Revenue Guarantee:

  | Approved APH Yield | 140 bu/ac |
  | Coverage Level     | 70%       |
  | Base Price         | $2.00     |
  | Revenue Guarantee  | $196      |
  | (140 x 2.00 x 0.7) |

Note: IIP is indexed to county yield and may be lower or higher than actual APH yield. But same payment principle as in the example.

How Does It Work? RA-BP/IIP Example

• RA-BP/IIP Indemnity Payment

  | Revenue Guarantee | $196 |
  | Harvest Price     | $1.90/bu (HP < BP)** |
  | Actual Yield      | 88 bu/ac |
  | Actual Revenue    | 167.20 (88 x 1.90) |
  | Indemnity*        | $28.80/ac |

  *(196 - 167.20) = $28.80

  **If HP = 2.50 (HP-BP), No indemnity! Actual revenue (2.5 x 88 = 220) > revenue guarantee (196)

How Does It Work? RA-HP & CRC

• Insures farm-level revenue
• Rev. coverage – 50% to 85%
• Price coverage – BP or HP (Allows guarantee to increase if HP > BP at harvest)
• Unit coverage – Basic, optional, enterprise; in RA-HP – plus whole farm
• Premiums – depends on county, unit, APH yield, coverage level
How Does It Work? RA-HP/CRC Example

- Revenue Guarantee:
  - Approved APH Yield: 140 bu/ac
  - Coverage Level: 70%
  - Base Price: $2.00
  - Revenue Guarantee*: $196

  *(140 x 2.00 x 0.7)*

  *If HP > BP, then use HP to calculate revenue guarantee. If HP = 2.50, revenue guarantee = 245

How Does It Work? RA-HP/CRC Example

- RA-HP/CRC Indemnity Payment (Case 1)
  - Revenue Guarantee: $196
  - Harvest Price: $1.90/bu (HP < BP)**
  - Actual Yield: 88 bu/ac
  - Actual Revenue: 167.20 (88 x 1.90)
  - Indemnity*: $28.80/ac

  *(196 - 167.20) = $28.80

  **If HP < BP, then payment with RA-HP/CRC same as RA-BP/IIP

How Does It Work? RA-HP/CRC Example

- RA-HP/CRC Indemnity Payment (Case 2)
  - Revenue Guarantee: $196
  - Harvest Price: $2.50/bu (HP > BP)**
  - Actual Yield: 88 bu/ac
  - Actual Revenue: 220 (88 x 2.50)
  - Indemnity*: $20/ac

  *(245 - 220) = $25

  **Since HP > BP, then recalculate revenue guarantee = 245
  (140 x 2.50 x 0.7). In RA-BP/IIP, no indemnity.
How Does It Work? AGR-Lite

• Whole-farm revenue protection plan
  - Insures adjusted gross revenue of whole farm (multiple crops/livestock) rather than individual crops
• Most farm-raised crops, animals, and animal products covered
• Can stand alone or with other insurance plans (APH)
  - Get discount if combined with APH

How Does It Work? AGR-Lite Example

• Liability and Revenue Guarantee

| Coverage level (65%, 75%, 80%) | 80% |
| Payment Rate (75%/90%) | 75% |
| Approved Adj. Gross Revenue | $100,000 |
| Liability (100,000 x 0.8 x 0.75) | $60,000 |
| Revenue Guarantee (100,000 x .8) | $80,000 |

How Does It Work? AGR-Lite Example

• Indemnity Payment

| Actual Revenue for the year | $70,000 (< $80,000) |
| Loss Below Guarantee | $10,000 |
| Indemnity Payment ($10,000 x 0.75) | $7,500 |
How does it work? AGR-Lite

- Uses producer's 5-year historical farm average revenue as reported on IRS tax form (Schedule F) and annual farm report
- Have liability limits and other eligibility requirements
  - Lots of paperwork!
  - Mar. 17 – Sales Closing Date

How does it work? GRP

- Based on county-level yields
  - Can have low individual yield and not get a payment
- Coverage level – 70% to 90%
- Protection level – % of $ max. value set by RMA for the county (60% to 150%)
- GRP premiums depend on county, coverage and protection level

How does it work? GRP Example

- GRP Guarantee:
  
  | Expected County Yield | 140 bu/ac |
  | Coverage Level        | 70%       |
  | County Yield Guarantee | 98 bu/ac |

  (140 bu/ac x 0.7)
How Does It Work? GRP Example

- GRP Indemnity Payment
  - County Yield Guarantee: 98 bu/ac
  - Protection level (100%): $256 (256 * 1.0 = 256)\(^*\)
  - *$256 is set by RMA for the county*
  - Actual County Yield: 88 bu/ac (88 < 98)
  - Indemnity**: $26.12/ac
    - **256 \[(98 - 88)/98\] = $26.12
      (protection level x percent shortfall)

How Does It Work? GRP Example

- Notes on GRP Payments:
  - Dependent on county yield reported by NASS
  - Released in March of the year following harvest – thus payments will take longer to receive
  - Less paperwork – no yield reports (only acreage reports) and no unit structures to worry about

How Does It Work? GRP

- Based on county-level revenues
  - Can have low individual revenue and not get a payment
  - Use “base” price and “harvest” price
- Coverage level – 70% to 90%
- Protection level – % of $ max. value set by RMA for the county (60% to 150%)
- GRIP premiums depend on county, coverage and protection level
How Does It Work? GRIP Example

• GRIP Guarantee:

<table>
<thead>
<tr>
<th>Expected County Yield</th>
<th>140 bu/ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Price</td>
<td>2.00</td>
</tr>
<tr>
<td>Coverage Level</td>
<td>70%</td>
</tr>
<tr>
<td>County Revenue Guarantee</td>
<td>196 bu/ac</td>
</tr>
<tr>
<td>(140 bu/ac x 0.7)</td>
<td></td>
</tr>
</tbody>
</table>

How Does It Work? GRIP Example

• GRIP Indemnity Payment

| County Revenue Guarantee | $196 bu/ac |
| Protection level (100%)  | $300       |
| Actual County Yield      | 88 bu/ac   |
| Harvest price            | $1.90      |
| Actual County Revenue    | $167.20    |
| Indemnity**              | $26.12/ac  |

**300 x [(196 - 167.20)/196] = $44.08 (protection level x percent shortfall)

How Does It Work? GRIP Example

• Notes on GRIP Payments:
  - Have “harvest” price option (to increase guarantee if HP > BP)
  - BP and HP used in calculations NOT based on actual prices received by producers
    • Set by RMA based on CBOT prices
  - Also rely on NASS county estimates, thus payments can take awhile
How Does it Work? Premium Costs Across Products

- Group products are typically less expensive than others
- Revenue products with HP options are typically more expensive
- APH product and revenue products without HP option somewhere in the middle

How Does it Work? Premium Cost Example

- Corn in Bertie County, NC (2007), non-irrigated, optional unit, 140 bu/ac APH, 70% Coverage Level

<table>
<thead>
<tr>
<th>Product</th>
<th>Est. Premium ($/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>APH</td>
<td>10.89</td>
</tr>
<tr>
<td>CRC</td>
<td>17.80</td>
</tr>
<tr>
<td>RA-HP</td>
<td>14.96</td>
</tr>
<tr>
<td>RA-BP</td>
<td>12.63</td>
</tr>
<tr>
<td>HP</td>
<td>7.32</td>
</tr>
<tr>
<td>GRP</td>
<td>2.18</td>
</tr>
<tr>
<td>GRIP</td>
<td>7.32</td>
</tr>
</tbody>
</table>

Strategies and Recommendations

- Issues to keep in mind when choosing the right crop insurance product for you:
  - Year-to-year yield variability
  - Cash flow requirements
  - Cash Reserves
  - Subsidized premium
Strategies and Recommendations

- Evaluate the different products based on the “Risk-Return” Framework
- Returns (over time):
  - Which product gives the highest payments?
  - Which product pays out more often?
  - Which product has the lowest premiums?
  - Which product pays out more often?

Strategies and Recommendations

- Risks (over time):
  - How do the different products change the likelihood of a profit shortfall?
  - What is the probability of receiving below breakeven revenues for the different products?
- After using Risk-Return framework, look at policy details and consider the following product-specific recommendations

Strategies and Recommendations

- APH Policy
  - Only protects yield losses, need to protect price declines with hedging/forward contracts
  - Use as much optional units as you can (more flexible)
  - Consider getting at least CAT
    - For producers with fairly stable production
    - Its essentially free!
Strategies and Recommendations

• RA-BP and IIP
  - Provides yield and price protection
  - May not be for aggressive users of forward contracts (can eliminate risk protection from insurance)
  - Not advisable in a volatile market (with a high chance of price upsweeps)
  - For IIP, consider how your farm yields relate to county yields

• RA-HP and CRC
  - Provides yield and price protection
  - For aggressive users of forward contracts or futures (HP option tempers hedging losses)
  - Better suited for a volatile market (with a high chance of price upsweeps)
  - Typically more expensive (lowers returns but provides good risk protection)

• GRP and GRIP
  - County-level yield/revenue protection
  - Good for farms that track county yields fairly well (i.e. no farm yields significantly below county in the past, no high risk ground)
  - Less expensive but payments come later
  - For producers in a strong financial position (one bad hit won’t terminate business)
  - Combine with hail/fire insurance for indiv. coverage
Strategies and Recommendations

• AGR-Lite
  – Revenue protection for multiple crops
  – For diverse operations
  – For producers with good records
  – For producers that can sell crop at prices higher than price elections/BP/HP.

Strategies and Recommendations

• Contact your insurance agent for more details about the policies

• Effectively communicate your risk management goals to your agent!

Additional resources

• USDA-RMA Website (http://www.rma.usda.gov)
  – Fact Sheets; Premium Calculators
  – Official Announcements

• USDA-RMA Raleigh Regional Office
  – Information pertaining to North Carolina

• NC State Crop Insurance Website
  – Go to the NCSU Ag. and Resource Econ. Extension website: http://www.ag-econ.ncsu.edu/extension.htm
  – I will put my presentations & extension materials here
More Questions?

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