Farm Income 2007
A Workshop Addressing Decision Making Challenges in a Risky Environment

SPRINGFIELD, ILLINOIS
DECEMBER 7, 2006

ROCHELLE, ILLINOIS
DECEMBER 12, 2006

MOLINE, ILLINOIS
DECEMBER 13, 2006

URBANA, ILLINOIS
DECEMBER 19, 2006

MT. VERNON, ILLINOIS
DECEMBER 20, 2006

Sponsored by:
University of Illinois Extension
Department of Agricultural and Consumer Economics
Illinois Farm Business Farm Management Association
USDA Risk Management Agency
OVERVIEW

Volatile crop yields and commodity prices, expanding biofuels production, the changing legal environment, escalating input costs, and a changing policy environment provide significant challenges for farm operators and owners, agricultural lenders, and managers of farm related businesses.

The University of Illinois Extension and the Department of Agricultural and Consumer Economics will be conducting the seventh annual Farm Income workshops in December 2006 to address some of these challenges for the year ahead. The workshops will include four general sessions – “Outlook for Commodity Prices”, “Illinois Farm Income Outlook”, “The 2007 Farm Bill: Prospects for Change” and “Biofuels: Implications for Prices and Production” and four breakout sessions:

- **“Impacts of Tillage and Rotations on Machinery Costs”** will examine the effects of different tillage methods and crop rotations on machinery costs.

- **“FAST Tools – Planning Beyond 2008”** is a hands-on computer session that will assist participants in evaluating future farm economic scenarios and assessing financial impacts of alternative investments.

- **“Energy and Agriculture: Legal and Tax Perspectives”** will explore legal and tax issues related to wind farms, biofuels, coal mining, oil leasing, and energy transmission.

- **“Crop Insurance and Risk Management in the Current Price Environment”** will evaluate crop insurance and risk management strategies given current price expectations. Impacts of 2007 Farm Bill alternatives affecting crop insurance will be discussed.

SPEAKERS

Paul Ellinger, Associate Professor, *University of Illinois*
Bryan Endres, Assistant Professor, *University of Illinois*
Travis Farley, Extension Specialist, *University of Illinois*
Darrel Good, Professor, *University of Illinois*
Gary Hoff, Extension Tax Specialist, *University of Illinois*
Scott Irwin, Professor, *University of Illinois*
Dale Lattz, Extension Economist, *University of Illinois*
Gary Schnitkey, Professor, *University of Illinois*
Bruce Sherrick, Professor, *University of Illinois*
Robert Thompson, Professor, *University of Illinois*
Donald Uchtmann, Professor, *University of Illinois*
Farm Income 2007
A Workshop Addressing Decision-Making Challenges in a Risky Environment

Schedule

8:30 a.m.    Registration – Coffee and Rolls

9:00         Outlook for Commodity Prices
             – Darrel Good

9:30         Illinois Farm Income Outlook
             – Dale Lattz

10:00        The 2007 Farm Bill: Prospects for Change
             – Robert Thompson

10:30        Breakout Sessions

12:15 p.m.   Lunch

1:15         Breakout Sessions Repeated

3:00         Biofuels: Implications for Prices and Production
             – Darrel Good and Scott Irwin

3:45         Adjourn
Outlook for Commodity Prices

Darrel Good
Department of Agricultural and Consumer Economics
University of Illinois

Executive Summary

Corn
• Modest sized 2006 crop from reduced acreage and higher yields.
• Very strong domestic demand from ethanol production; solid export demand.
• Surplus will be used and acreage needs to increase in 2007 and beyond.
• Prices will remain high and could become extremely volatile in the spring/summer of 2007.
• New price plateau?

Soybeans
• Record large 2006 U.S. crop will add to surplus.
• Solid export demand and growing biodiesel production.
• U.S. acreage to decline in 2007, South America to resume expansion in 2007-08.
• Prices will likely follow corn to ensure that acreage decline is not too severe.

Wheat
• Sharp reduction in U.S. and world wheat production in 2006.
• Winter wheat seedings increased in the U.S.
• SRW acreage may have been limited by wet fall in Indiana and Ohio.
• World wheat production to rebound in 2007.
• Prices to decline if production recovers.

Beef
• Expansion phase of cattle cycle to be limited by higher feed costs.
• Production will be up in 2007.
• Exports to continue to recover.
• Prices remain high, but moderating from highs of past two years.

Pork
• Production steadily increasing as litter size increases.
• Export demand to moderate as beef trade recovers.
• Uncertainty about impact of higher feed prices on rate of expansion.
• Prices trending lower.
Outlook for Commodity Prices

Darrel Good
Feed and Residual Use of U.S. Corn

million bushels

Food and Industrial Use of U.S. Corn

million bushels

1979-2006
US Corn Exports

Billion Bushels

Ending Stocks of Corn

<table>
<thead>
<tr>
<th>Year</th>
<th>Million Bushels</th>
</tr>
</thead>
<tbody>
<tr>
<td>79</td>
<td>798</td>
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<tr>
<td>80</td>
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<td>81</td>
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<td>05</td>
<td>1058</td>
</tr>
<tr>
<td>06</td>
<td>1068</td>
</tr>
</tbody>
</table>

The graph shows the ending stocks of corn from 1979 to 2006.
Average Farm Price of Corn

* projected
US Corn Acres Planted

1,000 Acres

US Corn Yields

Bushels per Acre

80.0 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03*04*05*06*
U.S. Soybean Crush

million bushels

Year: 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06

Values: 900 1000 1100 1200 1300 1400 1500 1600 1700 1800
US Soybean Exports
South American Soybean Production

million bushels

[Bar chart showing the production of soybeans from 1975 to 2006, with bars representing the years and the height of the bars indicating the production in million bushels. The production increases significantly from 1980 onwards.]
Ending Stocks of Soybeans

million bushels

79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03*04*05*06*
Average Farm Price of Soybeans

The chart represents the average farm price of soybeans from the years 1979 to 2006. The x-axis denotes the year, and the y-axis represents the prices in dollars.
US Soybean Acres Planted

[Graph showing the number of acres planted from 1979 to 2006, with peaks and troughs indicating fluctuations in soybean acreage.]
U.S. Soybean Yields
US Wheat Exports

Million Bushels

Ending Stocks of Wheat

million bushels

79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03* 04* 05* 06*
Average Farm Price of Wheat
US Wheat Acres Planted

1,000 Acres

79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03*04*05*06*
US Wheat Yield Per Acre

Bushels

79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03*04*05*06*
U.S. Cattle Inventory
January 1, 1925-2006

January 1, 2006 = 97.1 Million Head
1.7% more than on Jan. 1, 2005

Source: USDA & K-State Research & Extension
KSU Dept. of Ag Econ
www.agmanager.info
U.S. Beef Exports

Source: USDA & K-State Research & Extension
www.agmanager.info
U.S. Quarterly Litter Rate
June-August

Number Head

9.40
9.20
9.00
8.80
8.60
8.40


USDA-NAICS
9-29-2006
US Commercial Pork Production

Million Pounds

13000 14000 15000 16000 17000 18000 19000 20000 21000 22000

79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03* 04* 05* 06* 07*
Hog Prices
(Barrows and Gilts, U.S.)
Executive Summary

Estimates of 2006 financial performance for 742 Illinois grain farms are compared to actual financial performance in 2003, 2004 and 2005. Comparisons indicate that:

- The average net farm income for these farms in 2006 is projected between $90,000 and $95,000. This is approximately $30,000 above the average for the last six years. The average net farm income for the same farms was $72,086 in 2003, $91,106 in 2004 and $57,670 in 2005. Incomes for 2006 as compared to 2005 are higher due to higher corn and soybean yields and higher grain prices.

- Approximately 8 percent of the farms will have net farm incomes below $20,000 during 2006 while 42 percent of the farms are projected to have net incomes greater than $100,000.

- Projected net farm income levels for 2006 are the highest in the northern, central and east central regions of Illinois. Projected incomes are lowest in the western and southwestern regions. Projected incomes for 2006 as compared to 2005 are higher for all areas of the state except southwestern Illinois.

- Total government farm program payments are estimated to be lower for 2006 than in 2005 due to the higher grain prices which will most likely result in limited loan deficiency payments and no counter cyclical payments. Total farm program payments are estimated to be about $16,000 in 2006 compared to $60,000 in 2005. Average net farm income in 2005 would have been negative without farm program payments.

- Because of the high net farm income along with significant nonfarm income, average net worth is projected to increase for Illinois grain farms. A moderate increase in land values also contributes to the increase in net worth.

- About 87 percent of the farms are projected to have increases in net worth with 23 percent of the farms projected to increase their net worth by more than 10 percent between 2005 and 2006.

- Actual net farm income and net worth changes on individual farms will depend on a number of factors, including actual grain yields, the efficiency and equity position of the farm, land ownership and lease arrangements and actual valuation changes in machinery and land.

- Future increases in net worth will need to come from earnings above withdrawals as increases in farmland values are moderating.
Illinois Farm Income Outlook

by Dale Lattz, Paul Ellinger and Gary Schnitkey
Objectives

• Evaluate the financial condition of Illinois grain farms for 2006.
• Look at the impact of changing grain prices
• Evaluate the impact of the current farm program.
Approach

- Use a sample of Illinois FBFM grain farms with historical financial records.
- Use projections of yields and prices to determine revenue for each farm.
- Adjust historical expenses and financial data for each farm.
- Project net farm income and net worth change for each farm in the sample.
Trends on Illinois Grain Farms

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>% change 2001 - 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tillable acres</td>
<td>879</td>
<td>895</td>
<td>923</td>
<td>959</td>
<td>977</td>
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<tr>
<td>Percent owned</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>23</td>
<td>96</td>
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<tr>
<td>Percent crop share</td>
<td>45</td>
<td>45</td>
<td>43</td>
<td>41</td>
<td>40</td>
<td>89</td>
</tr>
<tr>
<td>Percent cash rent</td>
<td>31</td>
<td>32</td>
<td>34</td>
<td>36</td>
<td>37</td>
<td>119</td>
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<tr>
<td>Crop returns</td>
<td>347</td>
<td>337</td>
<td>382</td>
<td>423</td>
<td>407</td>
<td>117</td>
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<tr>
<td>Fertilizer</td>
<td>39.60</td>
<td>36.48</td>
<td>38.71</td>
<td>46.05</td>
<td>53.54</td>
<td>135</td>
</tr>
<tr>
<td>Pesticides</td>
<td>30.88</td>
<td>30.88</td>
<td>32.94</td>
<td>32.49</td>
<td>36.08</td>
<td>117</td>
</tr>
<tr>
<td>Seed</td>
<td>26.71</td>
<td>28.34</td>
<td>30.11</td>
<td>32.52</td>
<td>36.10</td>
<td>135</td>
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<tr>
<td>Crop total</td>
<td>97.19</td>
<td>95.70</td>
<td>101.76</td>
<td>111.07</td>
<td>125.72</td>
<td>129</td>
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<tr>
<td>Fuel and oil</td>
<td>10.80</td>
<td>9.46</td>
<td>10.47</td>
<td>12.80</td>
<td>16.50</td>
<td>153</td>
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<tr>
<td>Insurance</td>
<td>11.77</td>
<td>11.85</td>
<td>12.68</td>
<td>14.59</td>
<td>15.09</td>
<td>128</td>
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<tr>
<td>Cash rent per acre</td>
<td>121</td>
<td>121</td>
<td>124</td>
<td>129</td>
<td>130</td>
<td>108</td>
</tr>
</tbody>
</table>

Source: Illinois FBFM Association
Sample Farms by Size

742 grain farms
Average farm:
912 total acres
712 operator acres

- 501 to 1000 acres: 43%
- 1001 to 1500 acres: 20%
- 1501 to 2000 acres: 9%
- 300 to 500 acres: 19%
- Greater than 2000 acres: 5%
- Less than 300 acres: 6%
Good Corn and Soybean Yields in 2006

Soybeans tied for highest, corn second highest ever
Increasing Grain Prices*

<table>
<thead>
<tr>
<th>Year</th>
<th>Corn</th>
<th>Soybeans</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>$2.04</td>
<td>$4.55</td>
<td>$2.49</td>
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<tr>
<td>2002</td>
<td>$2.35</td>
<td>$5.66</td>
<td>$3.01</td>
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<tr>
<td>2003</td>
<td>$2.42</td>
<td>$7.51</td>
<td>$3.20</td>
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<tr>
<td>2004</td>
<td>$2.14</td>
<td>$5.84</td>
<td>$3.19</td>
</tr>
<tr>
<td>2005</td>
<td>$2.09</td>
<td>$5.74</td>
<td>$3.26</td>
</tr>
<tr>
<td>2006 est.</td>
<td>$3.00</td>
<td>$5.90</td>
<td>$4.35</td>
</tr>
</tbody>
</table>

* Marketing year average for Illinois
Key Assumptions

- Estimated prices received / year end inventory price
  - Corn: $3.25 / bu.
  - Soybeans: $6.10 / bu.
  - Wheat: $3.30 / bu.

- No estimated LDPs included
  - Corn: $.00 / bu.
  - Soybeans: $.00 / bu.

- No counter-cyclical payments
Key Assumptions – cont.

• Marketing margins on old crop
  – Corn: **Gain** of $0.21/bu. – 59% of crop
  – Soybeans: **Loss** of $0.13/ bu. – 52% of crop

• Pricing opportunities on new crop
  – Corn – 15% sold at $2.40 (\(-.85\) under inv.)
  – Soybeans – 10% sold at $5.90 (\(-.20\) under inv.)

• Use NASS November report of district projections of yields
Estimated Yields

FBFM Adjusted Yields

<table>
<thead>
<tr>
<th>Crop Reporting District</th>
<th>Soybean Yield</th>
<th>Corn Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005</td>
<td>2006</td>
</tr>
<tr>
<td>Northwest</td>
<td>52</td>
<td>56</td>
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<tr>
<td>Northeast</td>
<td>48</td>
<td>54</td>
</tr>
<tr>
<td>West</td>
<td>51</td>
<td>47</td>
</tr>
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<td>Central</td>
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<td>East</td>
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<td>West Southwest</td>
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<tr>
<td>East Southeast</td>
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<td>55</td>
</tr>
<tr>
<td>Southwest</td>
<td>49</td>
<td>48</td>
</tr>
<tr>
<td>Southeast</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>NASS Weighted Average</td>
<td>52</td>
<td>55</td>
</tr>
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</table>

November 2006 NASS projections. Yields adjusted to represent differences between NASS and FBFM.
Other Key Assumptions

• Average increase in farm size -- 3.0%

• Operating expenses adjustments from 2005
  – Crop expenses -- 9% increase
  – Fuel and oil -- 15% increase
  – Other machinery expenses -- 3% increase
  – All other expenses -- 4% increase

• Market value machinery -- no change

• Machinery economic depreciation -- 5% increase

• Land values -- 3% increase

• Interest expense -- 20% increase
# Net Farm Income

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Farm Income</th>
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<tbody>
<tr>
<td>2002</td>
<td>$25,336</td>
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<tr>
<td>2003</td>
<td>72,086</td>
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<tr>
<td>2004</td>
<td>91,106</td>
</tr>
<tr>
<td>2005</td>
<td>57,670</td>
</tr>
<tr>
<td>2006</td>
<td>90,000 – 95,000</td>
</tr>
</tbody>
</table>

Actual
Estimate

Net farm income does not include:
- Payments for operator labor/family withdrawals
- Nonfarm income
- Income and SE taxes
Net Farm Income 2001 - 2006

* 2006 Estimated

2001 – 2006 average net farm income = $61,985!!
Sensitivity of Estimate

One bushel change in

- Corn yields
- Soybean yields

Change in effective price

- Corn price - $.05
- Soybean price - $.20

Change in Average Income

- Corn yields: $1,300
- Soybean yields: 1,900
- Corn price: $3,500
- Soybean price: 3,500
Impact of Grain Prices

- Corn-$2.50  Soybeans-$5.50  NFI-$30,340
- Corn-$3.25  Soybeans-$6.10  NFI-$93,600
- Corn-$3.50  Soybeans-$6.40  NFI-$116,400
### Net Farm Income by Region

#### Crop Reporting District

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>$31,584</td>
<td>$49,986</td>
<td>$80,851</td>
<td>$36,134</td>
<td>$119,397</td>
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<td>Northeast</td>
<td>$18,539</td>
<td>$58,015</td>
<td>$73,357</td>
<td>$33,814</td>
<td>$115,154</td>
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<td>Central &amp; West</td>
<td>$34,085</td>
<td>$65,863</td>
<td>$79,235</td>
<td>$51,916</td>
<td>$91,179</td>
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<tr>
<td>East</td>
<td>$42,938</td>
<td>$67,737</td>
<td>$94,278</td>
<td>$69,590</td>
<td>$104,893</td>
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<td>West Southwest</td>
<td>$49,840</td>
<td>$101,070</td>
<td>$112,639</td>
<td>$60,065</td>
<td>$106,403</td>
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<tr>
<td>East Southeast</td>
<td>$12,789</td>
<td>$91,627</td>
<td>$102,667</td>
<td>$75,911</td>
<td>$96,137</td>
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<td>Southwest</td>
<td>$11,007</td>
<td>$74,914</td>
<td>$83,589</td>
<td>$75,649</td>
<td>$37,987</td>
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<td>Southeast</td>
<td>$19,877</td>
<td>$61,509</td>
<td>$101,504</td>
<td>$74,964</td>
<td>$76,324</td>
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<tr>
<td>NASS Weighted Average</td>
<td>$25,336</td>
<td>$72,086</td>
<td>$91,106</td>
<td>$57,670</td>
<td>$93,578</td>
</tr>
</tbody>
</table>

#### Notes

- The table lists the net farm income by region from 2002 to 2006.
- The NASS Weighted Average provides a weighted average of the net farm income across all regions.

#### Map

A map of Illinois with counties shaded in various colors, indicating different regions such as Northwest, Northeast, Central & West, East, West Southwest, East Southeast, Southwest, and Southeast.
2006 Net Farm Income by Region

- **NORTHWEST**: $76,300
- **NORTHEAST**: $38,000
- **WEST**: $96,100
- **EAST**: $106,400
- **CENTRAL**: $49,400
- **WEST SOUTHWEST**: $105,000
- **SOUTHWEST**: $119,400
- **SOUTHEAST**: $115,200
- **SOUTHWEST**: $76,300
Change in Net Farm Income
2005 to 2006

- $37,700

$46,300

$43,400

$11,000

$83,300

$81,300

$35,300

$20,200

$1,400
Distribution of Net Farm Income

Distribution Net Farm Incomes of Illinois Grain Farms

Farms below $20,000
2005  18%
2006  8%

<table>
<thead>
<tr>
<th>Net Farm Income</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than - 50,000</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>-50,000 to 0</td>
<td>2%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>0 to 20,000</td>
<td>6%</td>
<td>16%</td>
<td>6%</td>
</tr>
<tr>
<td>20,000 to 50,000</td>
<td>23%</td>
<td>28%</td>
<td>20%</td>
</tr>
<tr>
<td>50,000 to 100,000</td>
<td>35%</td>
<td>26%</td>
<td>30%</td>
</tr>
<tr>
<td>Greater than 100,000</td>
<td>34%</td>
<td>18%</td>
<td>42%</td>
</tr>
</tbody>
</table>
Changes to Net Worth

Net Income $93,578
- Family Living 60,003
+ Nonfarm Income 29,257
- Income Taxes 24,164
-/+ Valuation Change 17,913

Total Change in Net Worth $56,582
2005 to 2006

Assumptions:
• 3.0% increase in land values
• no change in machinery values

<table>
<thead>
<tr>
<th>Financial Position</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong</td>
<td>37%</td>
<td>36%</td>
<td>48%</td>
</tr>
<tr>
<td>Stable</td>
<td>44%</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>16%</td>
<td>18%</td>
<td>14%</td>
</tr>
<tr>
<td>Stressed</td>
<td>14%</td>
<td>14%</td>
<td>6%</td>
</tr>
<tr>
<td>Severe</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Year
# Maximum Counter-Cyclical Payment Rate

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Soybeans</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target price</strong></td>
<td>$2.63</td>
<td>$5.80</td>
<td>$3.92</td>
</tr>
<tr>
<td><strong>Direct payment rate</strong></td>
<td>0.28</td>
<td>0.44</td>
<td>0.52</td>
</tr>
<tr>
<td><strong>Trigger price</strong></td>
<td>2.35</td>
<td>5.36</td>
<td>3.40</td>
</tr>
<tr>
<td><strong>Loan rate</strong></td>
<td>1.95</td>
<td>5.00</td>
<td>2.75</td>
</tr>
<tr>
<td><strong>Max. counter-cyclical payment</strong></td>
<td>0.40</td>
<td>0.36</td>
<td>0.65</td>
</tr>
</tbody>
</table>

¹ Trigger price equals target price less direct payment rate.
² Equals trigger price minus loan rate.

Higher of loan rate or season average price used in rate calculation
## Outlook for 2006 CC Payments

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Soybeans</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger price</td>
<td>$2.35</td>
<td>$5.36</td>
<td>$3.40</td>
</tr>
<tr>
<td>12 month est. price for 2006*</td>
<td>$3.00</td>
<td>$5.90</td>
<td>$4.35</td>
</tr>
<tr>
<td>2006 CC Payments??</td>
<td>‘Most likely no payments’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We used...</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Advance</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

* Midpoint of Nov. 9 USDA Supply and Demand Report
** See Counter-cyclical tool in Marketing section of farmdoc
## LDP and Market Loan Gains

<table>
<thead>
<tr>
<th>Crop Year</th>
<th>LDP Payments</th>
<th>Market Loan Gain</th>
<th>% Bu. Receive LDP or Gain</th>
<th>Effective Bu. Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>$15,074,900</td>
<td>$2,964,600</td>
<td>17.6%</td>
<td>$0.01</td>
</tr>
<tr>
<td>2004</td>
<td>$537,015,540</td>
<td>$25,622,610</td>
<td>89.4%</td>
<td>$0.27</td>
</tr>
<tr>
<td>2005</td>
<td>$672,204,300</td>
<td>$23,381,510</td>
<td>93.8%</td>
<td>$0.41</td>
</tr>
<tr>
<td>2006</td>
<td>$12,950</td>
<td>$0</td>
<td>0.0%</td>
<td>$0.0</td>
</tr>
<tr>
<td>Soybeans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>$1,560</td>
<td>$71,960</td>
<td>0.1%</td>
<td>$0.00</td>
</tr>
<tr>
<td>2004</td>
<td>$54,665,570</td>
<td>$1,195,700</td>
<td>49.3%</td>
<td>$0.11</td>
</tr>
<tr>
<td>2005</td>
<td>$4,461,810</td>
<td>$1,414,940</td>
<td>20.0%</td>
<td>$0.01</td>
</tr>
<tr>
<td>2006</td>
<td>$2,894,560</td>
<td>$330</td>
<td>5.2%</td>
<td>$0.01</td>
</tr>
</tbody>
</table>

http://www.fsa.usda.gov/dafp/psd/reports.htm
Significance of Government Payments

Average
Net Farm Income $ 93,578
Government Payments 16,026

- Direct payments 16,026
- Counter-cyclical payments 0
- Loan deficiency payments 0

<table>
<thead>
<tr>
<th>Direct Payment</th>
<th>Counter Cyclical Payment</th>
<th>LDP Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>Corn</td>
<td>Corn</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Soybeans</td>
<td>Soybeans</td>
</tr>
<tr>
<td>Wheat</td>
<td>Wheat</td>
<td>Wheat</td>
</tr>
<tr>
<td>0.28</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>0.44</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>0.52</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Net Farm Income less Government Payments

2001 – 2006 average net farm income = $26,167!!
A Quick Look at Livestock

Livestock and Milk Prices Received

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hogs</td>
<td>34.64</td>
<td>40.41</td>
<td>53.54</td>
<td>51.50</td>
<td>48.50</td>
</tr>
<tr>
<td>Cattle</td>
<td>67.50</td>
<td>85.54</td>
<td>86.08</td>
<td>87.79</td>
<td>86.44</td>
</tr>
<tr>
<td>Beef calves</td>
<td>94.54</td>
<td>98.54</td>
<td>112.50</td>
<td>121.33</td>
<td>122.67</td>
</tr>
<tr>
<td>Milk</td>
<td>12.08</td>
<td>12.83</td>
<td>16.64</td>
<td>15.78</td>
<td>13.79</td>
</tr>
</tbody>
</table>

* Through September
Conclusions and Summary

• Grain farms only, limited livestock returns
• Excellent soybean yields, good corn yields, significantly higher grain prices result in much higher incomes
• Timing of marketing important, how much grain contracted early, how much will be sold at high prices
• Due to higher prices, government payments much less, basically only direct payments
• Higher input costs masked by high grain prices and good yields
Conclusions and Summary – cont.

• Highest income across northern, central and east central part of the state
• Financial position remains strong due to good incomes, land value increase moderating, will it decline??
• High grain prices resulting in pressure to increase cash rents for next year
• Due to higher costs, good yields and/or high grain prices needed to keep net farm incomes up
Executive Summary

- Most U.S. farm organizations and commodity groups are satisfied with the 2002 farm bill and are on record favoring its extension. However, a number of forces make some changes likely.

- With 93 percent of support going to producers of five commodities and over 60 percent of U.S. agriculture getting no support, many question the equity of our commodity programs. There has been widespread negative editorial comment in the media about current farm programs, and a number of new players are introducing new concepts and priorities into the 2007 farm bill debate.

- Rapid development of the U.S. ethanol industry has strengthened corn prices to the point that growers are unlikely to receive LDP or counter-cyclical payments for corn in the foreseeable future. This, together with strength in other commodity prices, is bringing some farm groups to look for alternative forms of government support such as revenue insurance or environmental/conservation payments.

- As the biofuels industry has expanded, many producers have lost enthusiasm for export markets. There is general support for our trade negotiators to secure larger market access overseas, but, failing this, they are hesitant to accept reductions in our own trade-distorting support. However, it is possible that future WTO cases might find all of our marketing loans, LDPs and CCPs to be inconsistent with current international trade law, just has occurred with cotton.

- The November 2006 elections gave the Democratic Party a majority in both chambers of the U.S. Congress. The new chairs of the Senate and House agriculture committees are from Iowa and Minnesota, respectively. They are likely to be more responsive to corn and soybean growers than their Southern predecessors who put greater priority on supporting cotton and rice.

- While impossible to predict, past experience suggests that one might expect greater support from a Democratically-controlled Congress for ethanol and biofuels, environmental and conservation programs. Nutrition programs, food safety, immigration reform, a higher minimum wage, country-of-origin labeling of meat, mandatory national animal I.D. and tighter animal welfare rules. One might expect less support for trade agreements (especially if they lack strong labor and environmental provisions) and for relaxation of endangered species rules.
The 2007 Farm Bill: Prospects for Change

Robert L. Thompson
2002 Farm Bill Had 10 Titles

• I. Commodity Programs
• II. Conservation
• III. Agricultural Trade and Aid
• IV. Nutrition Programs
• V. Farm Credit
• VI. Rural Development
• VII. Research
• VIII. Forestry
• IX. Energy
• X. Miscellaneous
The Changing Landscape

- Rapid growth of ethanol industry (with a lot of subsidies) with resulting increase in price of corn
- Change in leadership of Congress as a result of recent election
- Lack of interest in ag exports; growing general protectionist and anti-outsourcing sentiments in U.S.
- Suspension of Doha Round and threat of more litigation in WTO
- Unprecedented anti-farm program editorial comment in newspapers across the country
- Numerous groups proposing alternatives to present farm programs, including the Administration
Most Farm Organizations Happy with 2002 Farm Bill

- Majority of producers of supported commodities are happy with the support they have received from the programs authorized in the 2002 Farm Bill.
- Most U.S. farm organizations are on record as favoring extension of the 2002 Farm Bill unchanged.
- Some organizations would support change if we get a Doha Round Agreement that significantly increases market access overseas.
- Farm organizations are generous campaign contributors, and Congressional ag committees do listen to them.
Current Farm Supports Are Seen by Many as Inequitable

• 93% of all support goes to 5 commodities.
• Over 60% of US agriculture receives no support, and this part is not perceptibly less profitable than that which does.
• Southern crops (rice, cotton and sugar cane) receive much more support per acre and per farmer than Northern crops (corn, soybeans and wheat).
• 16% of payments go to rural residence farms.
Farm Programs Not Achieving Objectives

- Low farm family income
  - Most payments go to larger producers whose family incomes & wealth are well above average
  - Low income farmers receive very little from programs
- Variability of farm income
  - Farmers have income averaging, cash accounting & futures markets
- Increase competitiveness
  - Capitalization of payments into land values raises U.S. cost of production and undercuts international competitiveness
  - Public investments in agricultural research declining
- Food security
  - Not a credible problem when U.S. ag grows 1/3 more than we use domestically
- Rural development
  - Payments facilitate consolidation; don’t create more jobs
U.S. Farmers’ Changing World View

• Losing confidence in their international competitiveness (benefits of Uruguay Round Agreement on Agriculture (URAA) oversold)
• Think URAA was unfair in that allowed EU and Japan much higher trade-distorting support.
• See world market as a zero-sum game: They don’t recognize potential growth in LDC markets
• Reluctant to accept that being a large exporting country constrains our freedom of action in domestic policy making.
If “Successful,” WTO Ag Trade Negotiations Might:

- Eliminate all forms of ag export subsidies (would require US to change food aid rules)
- Increase market access by reducing tariffs (highest the most), and if exceptions are allowed, require larger minimum market access (as percent of domestic use)
- Reduce trade-distorting domestic subsidies (i.e. those linked to production of specific commodities)
  - The US has proposed complete elimination in 3 phases over 15 years.
  - It may be possible to move counter-cyclical payments to the Blue Box?
- Accelerate economic growth in low income countries where most market growth potential is.
Doha Ag Politics

• U.S. farm organizations will support a Doha Round Agreement that significantly reduces trade-distorting domestic subsidies only if the Agreement includes significant increases in market access.

• Bush Administration has done a poor job of communicating to U.S. farmers its WTO offer.

• The next farm bill will be likely written in mid-2007 at about the same time as President Bush’s fast-track negotiating authority expires.

• Many Democratic victors oppose liberal trade
Ethanol Development

- Farmers and politicians are more enamored with growth in ethanol and other biofuels industry than with exports.
- Ethanol industry growing rapidly with large subsidies, mandated use, tax exemptions, and protection from imports from lower-cost suppliers
  - ethanol from sugar cane cheaper than from corn
- This increased industrial demand for corn has resulted in smaller exports and higher prices.
- Higher feed grains prices reducing profitability of U.S. livestock and poultry industries.
Higher Commodity Prices

- Higher commodity prices are reducing projected future cost of current farm programs if they are continued unchanged in 2007 Farm Bill.
  - This becomes the “budget baseline” against which the cost of alternative policies will be evaluated.

- Higher projected corn price has the National Corn Growers Association looking already at revenue insurance as an alternative to present farm program structure.
Administration’s Farm Bill Priorities Consistent with Its WTO Proposal

• Secretary Johanns emphasizes:
  – Equity
  – Predictability
  – WTO compliant
  • Advocates shifting farm support from trade-distorting ("amber box") to non-trade-distorting ("green box").
  • Emphasizes threat of more litigation against other commodities that use marketing loans, LDPs and countercyclical payments.
2002 Farm Bill Will Be Reopened

• Need to change marketing loan, LDP and CCP provisions for cotton (and for other program crops, e.g. corn & soybeans, or risk losing them in future WTO litigation and not getting anything for them)

• The fruit and vegetable production exclusion in qualifying for direct payments needs to be changed to avoid them being counted against amber box cap.

• When NAFTA is fully implemented on Jan. 1, 2008, Mexico will get free access to US sugar market. The U.S. sugar program will have to change.
Alternatives to 2002 Farm Bill

• Environment/conservation payments
• Revenue insurance
• Direct payments
• Other?
Democratic Control of Congress

• New Agriculture Committee Chairs
  – Senate – Tom Harkin (Iowa)
    • Pro conservation and nutrition programs
    • Corn and ethanol
    • Former advocate of mandatory supply controls
  – House – Collin Peterson (Minnesota)
    • Fiscal conservative, but not with respect to ag supports
    • Sugar beets and dairy
    • Last year introduced a bill to extend 2002 Farm Bill

• Replaced Southerners with strong rice and cotton interests (but both remain on the ag committees)
Expect Stronger Support for:

• Ethanol and other biofuels
• Conservation & environmental programs
• Sugar, dairy and wheat supports
• Nutrition and food safety programs
• Immigration reform
• Higher minimum wage
• Country of Origin Labeling of Meats
• Mandatory national animal I.D. system
• Doing something about global warming
• Tighter animal welfare rules
Expect Less Support for:

- Trade agreements (especially if they lack strong labor and environmental provisions)
- Rice and cotton supports
- Relaxing endangered species rules
Conclusions

• A lot of new voices will be part of farm bill debate, but the ag & commodity organizations will dominate.
• The election likely reduced the Bush Administration’s role in writing the next farm bill.
• The agriculture committees of Congress are most likely to draft farm bills with commodity provisions quite similar to those in the 2002 Farm Bill, with some tinkering with target price levels and more money in conservation payments.
• The House of Representatives has so few members with rural interests that radical change could occur when the bill comes to the floor of the House for action. This creates the possibility for more fundamental change.
Biofuels: Implications for Prices and Production

Darrel Good and Scott Irwin
Department of Agricultural and Consumer Economics
University of Illinois

Executive Summary

- Ethanol mandated to reduce dependence on imported petroleum.
- Other benefits include economic development, reduction of greenhouse emissions, and support of farm incomes.
- Ethanol production is highly subsidized and the domestic industry is protected by an import tariff.
- High crude oil prices contribute to the success of ethanol.
- Ethanol production will exceed 5 billion gallons this year and 6 billion in 2007, using 2.15 billion bushels of corn in the 2006-07 marketing year.
- Ethanol demand will likely push corn prices to a higher level for an extended period.
- U.S. corn acreage will increase, but supplies will remain tight.
- Higher corn prices likely negatively impact non-fuel users, contribute to higher land values/rents, and encourage an increase in foreign production.
- Strong ethanol demand may result in significant policy changes, including income supports, trade, and conservation.
- To date, the contribution of ethanol production to the U.S. fuel supply has been modest.
- Biofuels mandates and subsidies are expected to remain, with Congress expressing a lot of support for biofuels.
- Support could be reconsidered if corn prices become punitive to other users, food prices increase, or society becomes disappointed with its contribution to the fuel supply.
Biofuels: Implications for Prices and Production

Darrel L. Good and Scott H. Irwin
Why Ethanol?

Convert relatively abundant domestic sources of energy into a substitute for imported petroleum
Energy Conversion

Natural Gas
Electricity
Petroleum
Coal
Methane
Sunlight

Ethanol
DDGs
Other Benefits

- Economic Development
- Reduce Greenhouse Emissions
- National Security
- Support Farm Income
U.S. Ethanol Biorefinery Locations

Source: Renewable Fuels Association
Economics of Ethanol

Currently economically feasible due to:
- $.51/gallon blender tax credit
- $.54/gallon import tariff
- High crude oil prices
- Mandates
Crude Oil Prices, Cushing, OK WTI Spot Price, Jan. 2, 1986 – Nov. 21, 2006

Source: U.S. Department of Energy, Energy Information Administration
Ethanol and Unleaded Gasoline Prices, F.O.B. Omaha, Nebraska, January 2004 - October 2006

Source: Nebraska Ethanol Board; Nebraska Energy Office
U.S. Ethanol Production, 1980-2006

Source: Renewable Fuels Association and Original Calculations

*2006 Projected
U.S. Corn for Fuel Use, 1975/76-2006/07

Source: USDA

*2006/07 Projected
Implications

Prices
- a new higher plateau?
- impact on other users?
- impact on land values/rents?

Supply
- will corn acreage increase?
- will yields continue to increase?

Stocks
- will a reserve be required?

Policy
- income supports, trade, conservation

Fuel Supply
- a significant contribution?

Source: USDA
Central Illinois Corn Price, September 1-November 22, 2006
Function of Prices

- Make sure all acres are planted
- Bring CRP back into production?
- Shift acres to corn in the US
- Encourage foreign production
- Limit expansion of non-fuel uses of crops
U.S. Corn Exports, 1975/76-2006/07

Source: USDA

*2006/07 Projected
U.S. Corn Feed and Residual Use, 1975/76-2006/07

Marketing Year

Feed and Residual (million bushels)

Source: USDA

*2006/07 Projected
U.S. Dried Distillers Grain (DDG) Production, 1975/76-2006/07

Source: Original Calculations

*2006/07 Projected
U.S. Corn Acreage, 1975/76-2006/07

Source: USDA

*2006/07 Projected
U.S. Corn Yields, 1975/76-2006/07

\[ y = 1.9x + 86.7 \]

\[ R^2 = 0.73 \]

Source: USDA

*2006/07 Projected
Ending Stocks of Corn

million bushels

Policy Implications

- Income supports not needed?
- Alter CRP contracts?
- Allow more ethanol/sugar imports?
- Soil and water conservation?
- Mandated rationing plans?
- Re-think biofuel subsidies?
Contribution to Fuel Supply

- 6 billion gallons of ethanol requiring about 2.2 billion bushels of corn
- US consumes 140 billion gallons of unleaded/yr
- Ethanol = 2/3 BTUs of unleaded gasoline
- 6 billion gallons of ethanol = 4.02 billion gallons of unleaded, or approximately 3 percent of gasoline supply
U.S. Ethanol Production Relative to Unleaded Gasoline Use, 1980-2005

Source: Renewable Fuels Association; U.S. Department of Energy, Energy Information Administration
### Is the Energy Balance Improving?

<table>
<thead>
<tr>
<th>USDA- Dry Milling</th>
<th>1996</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Net energy w/o co-product</td>
<td>+11%</td>
<td>+10%</td>
</tr>
<tr>
<td>- Net energy with co-products</td>
<td>+37%</td>
<td>+77%</td>
</tr>
</tbody>
</table>

* Difference is in the magnitude of energy credit for co-products

*50% energy balance, means ethanol’s net contribution to fuel supply is smaller than gross contribution (3%)
The Impacts of Tillage and Rotations on Machinery Costs

Gary Schnitkey and Dale Lattz
Department of Agricultural and Consumer Economics
University of Illinois at Urbana-Champaign

Executive Summary

During this session, five topics will be covered:

- Benchmark machinery values and costs are summarized from Illinois Farm Business Farm Management records. Fair market machinery values vary by farm size. In 2005, average machinery values are $297 per acre for farms with 500 to 1,000 acres, $269 per acre for 1,001 to 2,000 acre farms, $258 for 2,001 to 3,000 acre farms, $244 per acre for 3,001 to 4,000 acre farms, and $238 per acre for 4,001 to 5,000 acre farms. Power costs include utilities, machinery repairs, machinery hire and lease, fuel and oil, light vehicle, and machinery depreciation. In 2005, power costs average $70 per acre for 500 to 1,000 acre farms, $66 per acre for 1,001 to 2,000 acre farms, $68 for 2,001 to 3,000 acre farms, $70 for 3,001 to 4,000 acre farms, and $69 per acre for farms with over 4,001 acres.

- Machinery cost estimation is detailed and demonstrated using the Machinery Economics Microsoft Excel spreadsheet. This spreadsheet is available for download in the FAST section of farmdoc (www.farmdoc.uiuc.edu).

- Tillage has impacts on machinery costs. No tillage and strip tillage systems have lower costs than conventional tillage (use a chisel plow) and "heavy" tillage (use a primary tillage implement that goes deep in the soil) systems. Machinery inventory must be reduced in order to gain most of the cost advantages from using no-till and strip-till systems. Costs are increased by using "deep" tillage alternatives.

- Planting more corn will increase machinery costs. These cost increases will be small on most farms. Planting more corn will tighten planting windows, lengthen and complicate harvest, and add more tillage and fertilizer passes. In general, timing concerns will increase as more corn is planted.

- The costs of new combine have escalating rapidly. One way to reduce the impact of increasing costs is to use the combine over more acres, thereby spreading the costs of owning machinery over more acres. Sharing machinery may be an option.
The Impacts of Tillage and Rotations on Machinery Costs

by Gary Schnitkey and Dale Lattz
Topics

1. Benchmark machinery values
2. Machinery costs – estimation
3. Tillage impacts on machinery costs
4. More corn – costs and timing
5. Combine Costs – sharing machinery
Machinery Fair Market Value (FMV), Illinois Grain Farms, 2005
Machinery Fair Market Value Per Acre, Illinois Grain Farms, 2005

![Graph showing the relationship between tillable acreage and machinery fair market value per acre. The x-axis represents tillable acreage, ranging from 500 to 5000 acres, and the y-axis represents value per tillable acre, ranging from $0 to $700.]
# Machinery Fair Market Value (FMV) Per Acre, Illinois Grain Farms, 2005

<table>
<thead>
<tr>
<th>Tillable Acre Size</th>
<th>Low 1/3 Breakpoint</th>
<th>Average</th>
<th>High 1/3 Breakpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 to 1000</td>
<td>$235</td>
<td>$297</td>
<td>$331</td>
</tr>
<tr>
<td>1001 to 2000</td>
<td>219</td>
<td>269</td>
<td>293</td>
</tr>
<tr>
<td>2001 to 3000</td>
<td>194</td>
<td>258</td>
<td>287</td>
</tr>
<tr>
<td>3001 to 4000</td>
<td>179</td>
<td>244</td>
<td>261</td>
</tr>
<tr>
<td>4001 to 5000</td>
<td>225</td>
<td>238</td>
<td>245</td>
</tr>
</tbody>
</table>
### Power Costs Per Acre, Illinois Grain Farms, 2005

<table>
<thead>
<tr>
<th>Cost</th>
<th>Low 1/3 Breakpoint</th>
<th>Average</th>
<th>High 1/3 Breakpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities</td>
<td>$4</td>
<td>$6</td>
<td>$6</td>
</tr>
<tr>
<td>Machine Repairs</td>
<td>13</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>Machine Hire/Lease</td>
<td>2</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Fuel and Oil</td>
<td>13</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Light Vehicle</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Mach. Depreciation</td>
<td>14</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Total Power Costs (1)</td>
<td>$57</td>
<td>$68</td>
<td>$74</td>
</tr>
</tbody>
</table>

(1) Breakpoint costs will not add up to total power costs.
Power Costs Per Acre, Illinois Grain Farms, 2005
## Power Costs Per Acre, Illinois Grain Farms, 2005

<table>
<thead>
<tr>
<th>------------------</th>
<th>Tillable Acres</th>
<th>500 to 1000</th>
<th>1001 to 2000</th>
<th>2001 to 3000</th>
<th>3001 to 4000</th>
<th>&gt; 4001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities</td>
<td>$6</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$4</td>
<td></td>
</tr>
<tr>
<td>Machine Repairs</td>
<td>19</td>
<td>16</td>
<td>16</td>
<td>15</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Machine Hire/Lease</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Fuel and Oil</td>
<td>16</td>
<td>15</td>
<td>17</td>
<td>18</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Light Vehicle</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mach. Depreciation</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>25</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td><strong>Total Power Costs</strong></td>
<td><strong>$70</strong></td>
<td><strong>$66</strong></td>
<td><strong>$68</strong></td>
<td><strong>$70</strong></td>
<td><strong>$69</strong></td>
<td></td>
</tr>
</tbody>
</table>
Factors Influencing Costs

• Sizing equipment to farm size

• Inventory, Costs increase with
  – Additional tractors
  – Additional equipment

• Custom farming impacting costs on some farms
# List Prices for Machinery used on a 2,500 acre farm

<table>
<thead>
<tr>
<th></th>
<th>List Price</th>
<th>Average Value</th>
<th>Yearly Deprec. Interest Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>305 HP combine</td>
<td>$241,000</td>
<td>$154,800</td>
<td>$25,100 ($10/acre)</td>
</tr>
<tr>
<td>8-row corn head</td>
<td>44,000</td>
<td>28,300</td>
<td>4,590 ($2/acre)</td>
</tr>
<tr>
<td>30 ft grain platform</td>
<td>31,000</td>
<td>19,900</td>
<td>3,200 ($1/acre)</td>
</tr>
<tr>
<td>200 HP tractor</td>
<td>151,000</td>
<td>91,700</td>
<td>13,800 ($5/acre)</td>
</tr>
<tr>
<td>280 HP 4WD tractor</td>
<td>149,000</td>
<td>91,600</td>
<td>13,603 ($5/acre)</td>
</tr>
<tr>
<td>24-row planter</td>
<td>125,000</td>
<td>71,300</td>
<td>12,000 ($5/acre)</td>
</tr>
<tr>
<td>43 ft field cultivator</td>
<td>50,000</td>
<td>28,500</td>
<td>4,800 ($2/acre)</td>
</tr>
<tr>
<td>32 ft tandem disk</td>
<td>42,000</td>
<td>23,900</td>
<td>4,000 ($2/acre)</td>
</tr>
<tr>
<td>28 ft chisel plow</td>
<td>31,000</td>
<td>136,200</td>
<td>3,000 ($1/acre)</td>
</tr>
<tr>
<td>Grain cart</td>
<td>30,000</td>
<td>17,100</td>
<td>2,875 ($1/acre)</td>
</tr>
</tbody>
</table>

Average values and costs calculated given a 10 year life (7 year on combines) using *Machinery Economics* spreadsheet.
Factors Influencing Costs

- Equipment trading frequency have little impact on costs, except when large amount of new equipment purchased

- Harvesting has large impact on costs
Tillage Impacts on Costs

See “Machinery Costs for Alternative Systems”
Cost Estimation

See *Machinery Economics*, a *FAST* spreadsheet for analyzing machinery issues
"Typical" Tillage System

<table>
<thead>
<tr>
<th>Field Operation</th>
<th>Fuel &amp; Implement Overhead</th>
<th>Tractor Overhead</th>
<th>Total Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry fertilizer</td>
<td>0.50</td>
<td>0.80</td>
<td>0.50</td>
</tr>
<tr>
<td>A. ammonia</td>
<td>2.60</td>
<td>3.50</td>
<td>2.20</td>
</tr>
<tr>
<td>Field cultivate</td>
<td>2.90</td>
<td>3.10</td>
<td>2.90</td>
</tr>
<tr>
<td>Plant</td>
<td>2.50</td>
<td>4.90</td>
<td>2.10</td>
</tr>
<tr>
<td>Spray</td>
<td>1.20</td>
<td>1.30</td>
<td>1.10</td>
</tr>
<tr>
<td>Spray (1/3)</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
</tr>
<tr>
<td>Combine</td>
<td>9.70</td>
<td>5.60</td>
<td>19.20</td>
</tr>
<tr>
<td>Total</td>
<td>$19.80</td>
<td>$19.60</td>
<td>$28.40</td>
</tr>
</tbody>
</table>

Average over corn and soybean acres given 50-50 rotation
## Tillage System Costs ($ per Acre)

<table>
<thead>
<tr>
<th></th>
<th>Fuel &amp; Labor</th>
<th>Implement</th>
<th>Tractor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Typical”</td>
<td>$21.50</td>
<td>$20.60</td>
<td>$30.50</td>
<td>$72.60</td>
</tr>
<tr>
<td>No-till</td>
<td>15.55</td>
<td>18.85</td>
<td>25.55</td>
<td>59.95</td>
</tr>
<tr>
<td>Strip</td>
<td>15.75</td>
<td>17.95</td>
<td>25.60</td>
<td>59.30</td>
</tr>
<tr>
<td>“Heavy”</td>
<td>22.85</td>
<td>20.00</td>
<td>31.50</td>
<td>74.35</td>
</tr>
</tbody>
</table>
Points

• Any system can be made high/low cost (difficult to find differences from farm records)

• Yields are critical in determining profit difference (studies often find no statistical difference in yields)
Points, cont.

No-till system. Key to get saving is to:

– Get rid of tillage equipment
– Minimize large tractors

• Strip-till system.

– Question: How do you spread costs of large tractor for ammonia/stripping operation
More Corn – Costs

• See “Machinery Costs by Crop”
# Machinery Costs by Crop ($ per Acre)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Fuel &amp; Labor</th>
<th>---- Overhead ----</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn-after-soybeans</td>
<td>$19.80</td>
<td>$19.60</td>
<td>$67.80</td>
</tr>
<tr>
<td>Corn-after-corn</td>
<td>25.60</td>
<td>22.70</td>
<td>81.20</td>
</tr>
<tr>
<td>Soybeans</td>
<td>23.20</td>
<td>21.60</td>
<td>77.40</td>
</tr>
<tr>
<td>Wheat</td>
<td>14.40</td>
<td>19.40</td>
<td>59.60</td>
</tr>
<tr>
<td>Double-crop beans</td>
<td>10.50</td>
<td>14.70</td>
<td>47.10</td>
</tr>
<tr>
<td>Rotation</td>
<td>Fuel &amp; Labor</td>
<td>---- Overhead ---</td>
<td>Implem.</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------</td>
<td>--------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Corn-beans</td>
<td>$21.50</td>
<td>$20.60</td>
<td>$30.50</td>
</tr>
<tr>
<td>Corn-corn-beans</td>
<td>22.87</td>
<td>21.30</td>
<td>31.30</td>
</tr>
<tr>
<td>Corn-beans-wheat</td>
<td>19.13</td>
<td>20.20</td>
<td>28.93</td>
</tr>
<tr>
<td>Corn-beans-wht-dc</td>
<td>22.63</td>
<td>25.10</td>
<td>36.23</td>
</tr>
</tbody>
</table>
Points

• Adding more corn will add to costs

• “Heavy” tillage will likely have more of an impact on costs than amount of corn
More Corn -- Timing

• See “Timing Handouts”
Points

Adding more corn will:

– Tighten planting window

– Lengthen and complicate harvest

– Add more tillage and fertilizer passes
Drills and Split-row Planters with More Corn

- Increasing percentage of corn acres will reduce the number of soybean acres that you can spread drill and split-row planter costs over
- Increases per acre costs of split-row planters and drills
Split-row Planter Example

• 1,500 acre farm, 16-row planter
• 16-row planter
  – $59,000 list price, $50,150 purchase price

• Split-row addition
  – $38,500 list price, $32,300 purchase price
## Costs of Split-row Planter

<table>
<thead>
<tr>
<th></th>
<th>Corn Acre</th>
<th>Soybean Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>750 corn, 750 beans</td>
<td>$7.95</td>
<td>$13.36</td>
</tr>
<tr>
<td>1,000 corn, 500 beans</td>
<td>$7.95</td>
<td>$15.90</td>
</tr>
</tbody>
</table>
Controlling Combine Costs

- Combine is largest equipment investment on farm
- Large and growing size economies
- Many farms below acres needed to achieve size economies
- May suggest combine sharing
Combines Evaluated

Small
• 265 hp
• 6-row corn hd
• 20-ft. grain hd
• $224,000

Medium
• 305 hp
• 8-row corn hd
• 30-ft. grain hd
• $269,000

Large
• 340 hp
• 12-row corn hd
• 30-ft. grain hd
• $300,000

7 – year life, Salvage value is 51% of purchase price,
$2.50 fuel price, 7% interest rate
Per Acre Combine Costs

![Bar graph showing per acre combine costs for different acres harvested, with categories for Small, Medium, and Large.](image-url)
Per Acre Combine Costs, Large Combine, 2003, 2005, and 2006

$ per Acre

Acres Harvested

2003
2005
2006
Sharing Combine Over Multiple Farms, Example

• Two 1,500 acre farms each owning a combine
  – $29.25 per acre combine costs (from Machinery Cost Estimates)

• Two 1,500 acre farms sharing one combine (3,000 acres)
  – $20.25 per acre combine costs
Sharing Machinery, Issues

- Schedule for sharing combine
- Allocating costs
- Who pays for repairs
- How do you determine when to trade combine
- How do you end the “partnership”
Summary

• Machinery management has impacts on costs

• Tillage system has impact on costs

• More corn will increase costs, also complicate management

• Combine has large impacts on costs
FAST Tools – Planning Beyond 2008

Paul Ellinger and Travis Farley
Department of Agricultural and Consumer Economics
University of Illinois

Executive Summary

- FAST Tools are a set of spreadsheet-based computer applications designed to assist users with farm economic decisions.

- FAST Tools applications are subdivided into financial analysis, investment analysis, loan analysis, farm management, grain marketing and management, risk management and yield database utilities.
  - Financial analysis tools assist users in preparing and interpreting financial information and measuring financial health.
  - Investment analysis tools assist users in measuring the economic returns and performance of alternative types of investments.
  - Loan analysis tools assist users in calculating loan payments and schedules; comparing alternative loans; and measuring the sensitivity of payments to changes in loan parameters.
  - Farm management tools assist users in developing enterprise budgets and breakevens levels; estimating costs of machinery operations; and comparing crop insurance and farmland leasing alternatives.
  - Grain marketing and management tools assist users in developing enterprise budgets and breakeven levels; estimating costs of machinery operations; and comparing crop insurance and farmland leasing alternatives.
  - Risk management tools assist users in evaluating the impact of farmland lease types as well as marketing and crop insurance strategies on revenue and income distributions.
  - Yield database utilities assist users in analyzing county-level historical crop yields and with common computations related to soil productivity measures and yield predictions.
  - FAST Tools and Resources CD also contain publications and resources in areas of AgMAS, crop insurance, farm management, financial management, grain marketing, policy, law, and taxation.

- Planning beyond 2008 requires a careful assessment of a farmer’s objectives and long term goals.

- Decision criteria for investments and changes to an operation include measures of changes in efficiency, profitability, cash flow and overall wealth.

- FAST Tools provide a method to explore alternative economic and decision scenarios.

- Demonstrations of the Crop Rotation Tool, On-Farm Storage Analysis, Real Estate Purchase Analysis and Savings and Retirement Analysis are highlighted in the session.
FAST Tools
Planning Beyond 2008

By Paul Ellinger and Travis Farley
Outline

• FAST Tools overview

• Financial Planning beyond 2008

• Hands-on applications
  – Changing crop rotations
  – On-farm grain storage analysis
  – Land purchase
  – Savings and retirement planning
  – Others
FAST Tools

- farmdoc companion project initiated in 1999

- Development of spreadsheet-based tools to aid decisions for producers, lenders, consultants and investors

- Facilitate use, access, distribution of tools and resources through CD and internet distribution
  - Quarterly subscription
  - farmdoc download
  - via workshops

- Approximately 35,000 CDs produced and another 35,000 downloads

- Increased demand for education and training
FAST Tools - Overview

Computerized Decision Aids

- Financial Analysis
- Investment Analysis
- Loan Analysis
- Farm Management
- Grain Marketing & Management
- Risk Management
- Yield Database Utilities

farmdoc materials

- AgMas
- Crop Insurance
- Proceedings: this workshop
- Farm Management
- Financial Management
- Grain Marketing
- Policy
- Law and Taxation
Financial Analysis

Assist in preparing and interpreting financial information and measuring financial health

Analyzing Current Financial Condition
- Appraisal of current financial position
- Farm Financial Statements
- Personal Financial Statements
- Ratio calculator
- Cash to accrual income approximation
- Estimates of deferred taxes
- Net worth allocation

Financial Planning
- Cash flow planning
- Farm financial simulation
- Start-up company simulator
- Repayment capacity analysis
Investment Analysis

Assist in measuring the economic returns and performance of alternative types of investments.

- Capital budgeting
- Grain storage investment analysis
- Land purchase analysis
- Lease versus purchase
- Machinery financing
- MACRS calculator
- Savings calculator
- Retirement planner
- Time value of money calculator
Loan Analysis

Assist in calculating loan payments and schedules; comparing alternative loans; and measuring the sensitivity of payments to changes in loan parameters

- Loan amortization
- Loan comparison
- Revolving loan calculator
Farm Management

Assist in developing enterprise budgets and breakeven levels; estimating costs of machinery operations; and comparing crop insurance and farmland leasing alternatives

- Break even analysis
- Crop budgeting tool
- Crop insurance calculator
- Crop rotation tools
- Enterprise allocation and analysis
- Farmland lease analysis
- Machinery economics
Grain Marketing and Management

Assist in tracking grain inventory and estimating the costs and returns of grain storage and delivery

- Crop storage analysis
- Grain delivery model
- Grain inventory management
- Grain storage investment analysis
- Grain pricing model
Risk Management

Assist in evaluating the impact of farmland lease types as well as marketing and crop insurance strategies on revenue and income distributions.

- Farm rent evaluator
- Insurance evaluator
- Marketing and crop insurance risk model
- Crop insurance payment calculator
- Premium calculators
Yield Database Utilities

Assist in analyzing county-level historical crop yields and with common computations related to soil productivity measures and yield predictions

- Illinois, Iowa, Indiana crop yield databases
- Illinois soil productivity index utilities
FAST Hands-on Computer Workshops
February - March

• Improving Your Financial Management
  – Preparing financial statements
  – Understanding your financial health
  – Ratio analysis and benchmarking your farm
  – Short and long-term projections

• Exploring Risk Management Strategies
  – Crop insurance update
  – Tools to assess marketing and crop insurance

• Attend one or two sessions
FAST Training

**February 14-15**
Crowne Plaza Hotel  
3000 S. Dirksen Parkway  
Springfield, IL  
217-529-7777

**February 21-22**
Holiday Inn Hotel & Conference Center  
1001 W. Killarney  
(Under 183, I-74)  
Urbana, IL  
217-328-7900

**February 28 - March 1**
Hickory Grove Banquet & Conference Center  
1127 N. 7th St.  
Rochelle, IL  
815-562-5668

**March 7-8**
Holiday Inn Hotel  
222 Potomac Blvd.  
(Exit 95, I-57)  
Mt. Vernon, IL  
618-244-7100

Visit www.farmdoc.uiuc.edu/fasttools/ for current FAST Training schedules
Long-term Decision Making

Decision Criteria
- Effects on profitability and wealth
- Cash flow and liquidity impacts
- Operation efficiency and timeliness
- Comparisons to alternative future investments
- Feasibility of future investments
- Range of outcomes across potential scenarios

Risk and Return
Long-term Decision Making

Key Input Elements
- Investment costs
- Additional revenues and costs -> net cash flows
- Valuation changes
- Time value of money
  - Investment Alternatives
  - Cost of debt
- Cash feasibility within given investment and financial plans
Long-term Decision Making

FAST Tools
- Evaluate economic factors

- Alternative scenarios
  - Most likely
  - Best case
  - Worst case
  - Break even case

- Provide some benchmarks to support your decision
Demo -- Hands-on applications
Executive Summary

- Tax incentives to produce ethanol and biodiesel include credits against federal excise taxes of $0.51/gallon for pure ethanol produced from biomass (corn, cellulosics) and $1.00/gallon for pure agri-biodiesel (produced from soy or other oil seeds). Also, small producers of ethanol and biodiesel get an income tax credit of $0.10/gallon capped at $1.5 million per year per producer (a small producer is one with less than 60 million gallons of production capacity).

- These credits have significant impacts, including tax consequences, on taxpayers, consumers, ag producers, and investors.

- The investment offerings related to ethanol and biodiesel plants are often structured so that the company is exempt from the federal requirement to register Membership Units with the U.S. Securities and Exchange Commission; as a consequence the company saves significant costs associated with registration but the potential investor enjoys little regulatory protection. Potential investors should carefully assess the risks and the potential investment success. The old adage “Caveat Emptor” (let the buyer beware) applies!

- World Trade Organization (WTO) rules apply to international trade in biofuels; the U.S. tax subsidies applicable to the production of ethanol and biodiesel, coupled with the tariff of $0.56/per gallon of imported ethanol, may cause nations hoping to export ethanol to the U.S. to initiate a WTO challenge to the U.S. laws and policies.

- There are numerous legal considerations related to wind farms; easements granted by landowners may limit use of the farmland forever; landowners should consider both short and long run consequences of any proposed agreement involving wind farms; generally, landowners should consult with legal counsel before signing any easements or agreements.

- Illinois is witnessing renewed interest in its abundant coal reserves as a source of energy; one of the more controversial methods of extraction is long wall mining; the controversy arises because of the great potential for subsidence damage to the surface, including damage to drainage systems; long wall mining is legal in Illinois, but requires a permit; landowners or their predecessors in title may have waived rights to subjacent support and this can limit their ability to recover for subsidence damages; it is usually a good idea to obtain legal counsel before selling mineral interests or waiving rights to subjacent support.

- New power lines and pipelines will be constructed in Illinois; utilities attempt to negotiate rights-of-way with landowners voluntarily, but utilities usually have the right to acquire necessary rights of way by eminent domain; the Ill. Dept. of Agriculture attempts to mitigate the adverse impacts of powerlines and pipelines on agriculture, but the negotiations between landowner and utility are still very important; legal counsel may be very helpful.
Energy and Agriculture: Tax and Legal Perspectives

By Don Uchtmann, Bryan Endres & Gary Hoff
Part of farmdoc’s Farm Income 2007 seminars
Overview of Presentation

I. Tax Incentives to Make and Use Biofuels
II. Regulating Biofuel Investment Offerings
III. Biofuels, International Trade, and the WTO
IV. Legal Issues Surrounding Wind Farms
V. Coal Mining, Subsidence, and Other Legal Issues
VI. The Expanding National Power Grid: Utility Easements and Agriculture
I. Tax Incentives and Biofuels

Impacts on You as a …

– Taxpayer
– Consumer
– Ag Producer or Farmland Owner
– Potential Investor, e.g., in a new Ethanol Plant

*Thanks to Gary Hoff for preparing this section*
Henry Ford & Ethanol

"There's enough alcohol in one year's yield of an acre of potatoes to drive the machinery necessary to cultivate the fields for one hundred years."
Some Basic Biofuels Terminology

- Biodiesel
- Ethanol
- Bioethanol
- Methanol
Biofuel Tax Subsidies – Overview

• Federal tax incentives for alcohol fuels were first established in 1978 for 10% blended gasoline (gasohol) creating an effective Federal subsidy for ethanol of $0.40/gallon. Various subsequent acts have raised or lowered, modified, and extended the subsidy.

• Tax incentives for biodiesel were first initiated in 2004 with the American Jobs Creation Act.

• In addition to the tax subsidies, there is the Renewable Fuels Standard for biofuels and several other types of incentives provided in the Energy Policy Act of 2005.
### Major Fed. Ag Biofuel Tax Incentives

http://cta.ornl.gov/bedb/biofuels/Major_Federal_Biofuel_Tax_Incentives.xls

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Incentive</th>
<th>Comment &amp; Expiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol*</td>
<td>$0.51/gal used/blended</td>
<td>Excise tax credit; 12/31/10</td>
</tr>
<tr>
<td></td>
<td>$0.10/gal on 1st 30 mil gal; Max $1.5 mil/yr</td>
<td>Small Plant IncTaxCr, i.e., &lt;60 mil gal plant; 12/31/08</td>
</tr>
<tr>
<td>Agri-Biodiesel</td>
<td>$1.00/gal used/blended</td>
<td>Excise tax credit; 12/31/08</td>
</tr>
<tr>
<td></td>
<td>$0.10/gal on 1st 15 mil gal; Max $1.5 mil/yr</td>
<td>Small Plant IncTaxCr, i.e., &lt;60 mil gal capacity</td>
</tr>
<tr>
<td>Renewable Diesel made from biomass</td>
<td>$1.00/gal used/blended</td>
<td>Thermal depolymerization process used; 12/31/08</td>
</tr>
<tr>
<td>E85 &amp; B20</td>
<td>30% credit for installing E85/B20 infrastructure</td>
<td>$30,000 max Income Tax Credit; Jan 06 - Dec 07</td>
</tr>
</tbody>
</table>

*Domestic Ethanol generally protected by tariff of 2.5% plus $0.54/gal on imports (this more than recoups the $0.51/gal tax credit provided when ethanol blended for E85)*
WHAT DOES THE ENERGY-RELATED TAX LEGISLATION MEAN TO YOU . . .

- As a taxpayer.
- As a consumer.
- As a producer.
- As an investor.
Impacts on Taxpayers

• Taxpayers are paying for
  – Credits to fuel producers.
  – Credits to blenders.
  – Other energy conservation tax incentives.

• Taxpayers are subsidizing many energy development and energy conservation initiatives
Impacts on Consumers

Consumers get . . .

• Lower energy costs than would otherwise be the case.
• Tax credits for conserving energy.
Ethanol: $2.14\frac{9}{10}

Regular Gasoline: $2.36\frac{9}{10}

Super Gasoline: $2.49\frac{9}{10}

Premium Gasoline: $2.59\frac{9}{10}

Diesel #2: $2.35\frac{9}{10}

Bio-Diesel: $2.65\frac{9}{10}

Natural Gas: $1.99\frac{9}{10}

Propane: $1.68\frac{9}{10}$
Lower Fuel Costs?

- E 85 fuel
- M 85 fuel
Illinois E 85 Locations
Consumer Tax Credits for Conserving Energy

• Purchase of qualified motor vehicles.
  – These are hybrid (not E85) vehicles

• Other
  – Energy saving home improvements and expenditures.
  – Energy efficient new home construction.
## Qualified Vehicles (Hybrids)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chevrolet</td>
<td>2006</td>
<td>Silverado 2WD Hybrid</td>
<td>$250</td>
</tr>
<tr>
<td>Chevrolet</td>
<td>2006</td>
<td>Silverado 4WD Hybrid</td>
<td>650</td>
</tr>
<tr>
<td>Chevrolet</td>
<td>2007</td>
<td>Silverado 2WD Hybrid</td>
<td>250</td>
</tr>
<tr>
<td>Chevrolet</td>
<td>2007</td>
<td>Silverado 4WD Hybrid</td>
<td>650</td>
</tr>
<tr>
<td>Ford</td>
<td>2006</td>
<td>Escape 2WD Hybrid</td>
<td>2,600</td>
</tr>
<tr>
<td>Ford</td>
<td>2006</td>
<td>Escape 4WD Hybrid</td>
<td>1,950</td>
</tr>
<tr>
<td>Ford</td>
<td>2007</td>
<td>Escape 2WD Hybrid</td>
<td>2,600</td>
</tr>
<tr>
<td>Ford</td>
<td>2007</td>
<td>Escape 4WD Hybrid</td>
<td>1,950</td>
</tr>
</tbody>
</table>

Caution: This is not a complete list.
Impacts on Producers

- Higher grain prices?
- New crops?
- Lower fuel costs?
Higher Grain Prices

$3.450 + 14.5c$ as of 11/14/2006
Potential for New Energy Crops

- Switch grass
- Napier grass
- Miscanthus
- Meadowfoam
- Cottonwood
- Sunflowers
New Crops
Lower Fuel Costs?

CARL’S CORNER TRUCKSTOP
I-35E Exit 374 Carl’s Corner, Texas

BIO WILLIE
DIESEL FUEL
Family farmers growing fuel for America and the world

[Image of a tractor]

[Image of a person working on the tractor]
Impact on Investors

• Profit potential.
• Possible tax savings.
MGP Ingredients
Investor Tax Considerations

- Basis
- At-risk
- Passive activity
### Part I  Information About the Partnership

<table>
<thead>
<tr>
<th>A</th>
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<thead>
<tr>
<th>B</th>
<th>Partnership’s name, address, city, state, and ZIP code</th>
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<tbody>
<tr>
<td></td>
<td>Yellow Gold Ethanol LLC</td>
</tr>
<tr>
<td></td>
<td>127 Ear Corn Road</td>
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<tr>
<td></td>
<td>Somewherein, IL 5555</td>
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<table>
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<th>Check if this is a publicly traded partnership (PTP)</th>
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<tr>
<th>E</th>
<th>Tax shelter registration number, if any</th>
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### Part II  Information About the Partner

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<th>G</th>
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<table>
<thead>
<tr>
<th>H</th>
<th>Partner’s name, address, city, state, and ZIP code</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>John Farmswell</td>
</tr>
<tr>
<td></td>
<td>25 Center Road</td>
</tr>
<tr>
<td></td>
<td>Anyplace, IL 66666</td>
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</tbody>
</table>

| Part III  Partner’s Share of Current Year Income, Deductions, Credits, and Other Items |
|-------------------------------------------------|--------------------------------------|
| 1. Ordinary business income (loss) (9,550)      | 15. Credits & credit recapture       |
| 2. Net rental real estate income (loss)          |                                      |
| 3. Other net rental income (loss)                | 16. Foreign transactions             |
| 4. Guaranteed payments                           |                                      |
| 5. Interest income                               | 50.                                   |
| 6a. Ordinary dividends                            |                                      |
| 6b. Qualified dividends                           |                                      |
| 7. Royalties                                     |                                      |
| 8. Net short-term capital gain (loss)             |                                      |
| 9a. Net long-term capital gain (loss)             | 17. Alternative minimum tax (AMT) items|
| 9b. Collectibles (28%) gain (loss)                |                                      |
| 9c. Unrecaptured section 1250 gain               |                                      |
| 10. Net section 1231 gain (loss)                 | 18. Tax-exempt income and nondeductible expenses|
| 11. Other income (loss)                          |                                      |
**Partner's name, address, city, state, and ZIP code**

**John Farmswell**  
25 Center Road  
Anyplace, IL 66666

| I | General partner or LLC member-manager | □ | Limited partner or other LLC member | ✓ |
| J | Domestic partner | □ | Foreign partner | |

**K** What type of entity is this partner?  
________________________

**L** Partner's share of profit, loss, and capital:

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<thead>
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<th>Beginning</th>
<th>Ending</th>
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<tr>
<td>Profit</td>
<td>%</td>
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<tr>
<td>Loss</td>
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<td>5.000%</td>
</tr>
<tr>
<td>Capital</td>
<td>%</td>
<td>5.000%</td>
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**M** Partner's share of liabilities at year end:

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<tr>
<td>Nonrecourse</td>
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<tr>
<td>Qualified nonrecourse financing</td>
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<tr>
<td>Recourse</td>
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*See attached statement for additional information.*

**N** Partner's capital account analysis:

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<td>Beginning capital account</td>
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<tr>
<td>Capital contributed during the year</td>
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<tr>
<td>Current year increase (decrease)</td>
<td>$(9,500)</td>
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<tr>
<td>Withdrawals &amp; distributions</td>
<td>$500</td>
<td></td>
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<tr>
<td>Ending capital account</td>
<td>$500</td>
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Tax basis: ✓, GAAP: □, Section 704(b) book: □, Other (explain): □

**For IRS Use Only**

For Privacy Act and Paperwork Reduction Act Notice, see Instructions for Form 1065.

Cat. No. 11394R  
Schedule K-1 (Form 1065) 2005
Summary for Investors

• Investigate.
• Understand the tax consequences
• Look at both the pros and cons.
• Understand the investment risk and whether the investment opportunity is subject to securities regulation
• Do what is best for you.
II. Securities Regulation of Biofuels Investment Offerings . . .

GIBSON CITY

Ethanol plant operation seeks area investors

First meeting giving details slated for Monday

- Excerpt from The News-Gazette (Nov. 16, 2006, p. A5)

(Thanks to Don Uchtmann for preparing this topic)
PROSPECTUS [HYPOTHETICAL]

XYZ BIODIESEL, LLC

30,000,000 Membership Units
Offering Price: $1.00 per Unit
Minimum Purchase Requirement: $30,000 Units ($30,000)
Additional Purchases in Increments of 1,000 Units ($1,000)

We are offering limited liability company membership units in XYZ Biodiesel, LLC, a newly formed, development stage Illinois limited liability company. We intend ....

(... in a real prospectus, perhaps 60 + pages follow)
Regulation or Non-Regulation?

Offerings are often structured to be exempt from S.E.C. Securities Registration Requirements. Hence, the warning often appearing at the bottom of page 1 on a Prospectus, e.g. …

THESE UNITS HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE SECRETARY OF STATE OF ILLINOIS, THE STATE OF ILLINOIS, OR THE S.E.C., NOR [HAVE THEY] PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE. THE UNITS OFFERED THOROUGH THIS PROSPECTUS ARE SPECULATIVE SECURITIES AND INVOLVE A HIGH DEGREE OF RISK (see “RISK FACTORS” beginning on page …).
Select Security Regulation Laws

• Security Act of 1933 (15 USC Sec. 77a)
  – Publicly offered securities must be registered
  – Prospectus required; fraud regulated
• Sec. Exchange Act of 1934 (15 USC 78a)
• State “Blue Sky” laws (e.g., 815 ILCS 5)
What is a “Security”?

Securities include such things as:

- Notes, Stocks, Bonds
- Debentures, Other Evidences of Indebtedness
- Certificates of Interest in Profit Sharing Agreements
- Pre-organization Certificates or Subscriptions
- Puts, Calls, Options on any Security
- INVESTMENT CONTRACTS (a catch-all)

See Sec. 2(1) of 1933 Act, Sec. 3(a)(10) of 1934 Act
Securities Registration

• If a security is publicly offered by a company in the U.S., the 1933 Act requires that the security be registered with the SEC

• Registration is intended to ensure that key info concerning the company is filed with the SEC and distributed to potential investors in the prospectus

• When securities are registered, SEC only determines the adequacy and accuracy of info in the registration statement and Prospectus
Exemptions from SEC Registration

• Reg. A Exempt Offering
• Reg. D Exempt Offering (Rules 504 & 505)
• Sec. 4(2) Private Placement Exempt Offering
  – E.g., offerings to institutional investors, only
• Sec. 3(a) and Rule 147 Intrastate Offerings
  – Company and Investors all from Same State
• Others
Reg. D Rule 506 “Safe Harbor”

Key Requirements:
• No limit on aggregate offering price
• No limit on number of “accredited investors”
  – These include executive officer, directors
  – Also, e.g., any natural person with
    • net worth $1 million OR
    • individual income $200k in last two years
• Up to 35 “sophisticated investors”
  – They have knowledge & experience in business to evaluate merits and risks of the offering
• NO solicitation or advertisement to the general public
III. Application of World Trade Organization (WTO) Rules to International Trade in **Biofuels**

Primary Source:


*(Thanks to Bryan Endres for preparing this topic)*
What Drives Biofuel Production?

1) Increased demand for raw materials (e.g., corn), leading to increased prices

2) Increased rural development

3) Environmental protection

4) Energy independence

   → But, the most efficient or cost-effective sourcing of raw materials for biofuel production may not necessarily be through domestic production.
Where WTO Rules May Come Into Play

1. If the U.S. continues to *subsidize* or otherwise encourage production through *policies and laws*, whether at the point of raw material production or biofuel production

2. If foreign countries seek to sell biofuels in the U.S., and the U.S. applies a *tariff* to protect domestic production.
3 Issues Arise In This Context

1) How should the WTO *classify* biofuels—as an environmental, agricultural, or industrial good—and what are the implications of each classification?

2) Can existing or future WTO rules address the *subsidization* of production or consumption of biofuels? What about cross-subsidization?

3) How do WTO rules apply to *rules and regulations* mandating or preferring use of biofuels?
Issue 1: Classification and WTO Law

• For purposes of achieving certainty, transparency, and non-discrimination in international trade WTO law, members are encouraged to express their commitments with respect to tariffs in terms of a bound rate, to be applied on an unconditional most favored nation status (MFN). These provisions are found in the General Agreement on Tariffs and Trade (GATT).

→ MFN means that WTO members have a legal obligation not to impose tariffs in excess of that rate on imports of the product in question from other WTO members.

→ To arrive at the bound rate, members adhere to the “Harmonized Commodity Description and Coding System” (HS), which contains classifications of goods.
Ethanol Classification

- The US classifies fuel ethanol separately from the broader HS classification for all ethanol, applying a 54 cent per gallon tariff on imports of fuel ethanol.
  - Other countries do not classify ethanol the same way, and the HS does not contain distinctive headings for biofuels.
- Ethanol qualifies as an agricultural good under the WTO Agreement on Agriculture (AoA); biodiesel is considered an industrial good.
  - This distinction has tariff implications.
- Ethanol and biodiesel could conceivably fall under the WTO Environmental Goods and Services (EGS) negotiations under the Doha Ministerial Declaration, which calls for reduction or elimination of tariff and non-tariff barriers on EGSs.
  - The US has taken the position that only certain non-agricultural products should be included in EGS negotiations, which excludes ethanol given its HS classification.
- The US does not give preferential treatment to biofuels imported from developing countries under WTO’s Generalized System of Preferences (GSP).
  - The European Union does give preferential treatment to biofuel imports from developing countries.
Classification Solutions to Potential Biofuel Trade Disputes

1) Amend the HS classification system to include a specific HS heading for biofuels.
   ➔ This is a slow process.

2) Amend the annex to the AoA to include an HS classification, by consensus of WTO membership.

3) Negotiate a separate agreement in the WTO
Issue 2: Subsidization of Biofuel Production and/or Consumption

• US subsidies of ethanol production began during the 2nd oil shock of the late 1970s.
  – the Energy Security Act of 1978 provided a $.40/gallon federal excise tax exemption (now at $.51/gallon through 2010).
  – The Energy Tax Act of 1980 established a loan program for small producers of ethanol.
  – DOE funds research on renewable fuels
Issue 2: Subsidies (continued)

Classification of biofuels is not only important for purposes of tariffs, but also determines which WTO rules apply to subsidies:

- *The AoA* contains notification requirements, quantitative ceilings, and reductions over time for agricultural subsidies, *depending on whether the subsidy falls under the amber versus green box*. But, biofuels have been excepted from these requirements up until now.

- *The Subsidies and Countervailing Measures (SCM) Agreement* prohibits export subsidies and subsidies contingent on the use of domestic over imported products. The latter is an issue in the biofuels arena.

- **Other subsidies** that do not fall under the SCM may still be actionable if:
  1. a government makes a financial contribution;
  2. the recipient receives a benefit;
  3. the subsidy is targeted to a specific class; and,
  4. an adverse effect occurs.
Examples of Subsidies

1) Subsidies on production of biofuels
   -US: Volumetric Tax Credit for biodiesel=$1.00/gallon produced from virgin oils or fats and $.50/gallon from recovered oils/fats (waste-grease)

2) Subsidies on consumption of biofuels
   -EU member states: exemptions from gasoline tax to purchasers of biofuels.
More Examples of Subsidies

3) Subsidies on raw materials used for biodiesel production
   - must distinguish b/t (a) general support for production versus (b) targeted support to production intended for biofuel use
   - Trend: subsidy for production of biofuel inputs on “set aside” land? Corn (a marketable agricultural product) versus switchgrass?

4) Subsidies to by-products created in the manufacture of biofuels
   - does the subsidization of biofuels act as a “downstream” subsidy of glycerol?
   - do “cross-subsidized” by-products lead to increased exports that displace other like-product providers?
Issue 3: Domestic Regulations and WTO Law

The cornerstone principle of the WTO approach to internal policies is **non-discrimination:**

**Art. 1 (MFN):** Internal regulations cannot provide less favorable treatment to imports from some WTO members relative to like products of other members to the extent that there is discrimination on the basis of which WTO member the import is coming from.

**Art. 3 (National Treatment):** Divided into fiscal and non-fiscal measures
Examples of Regulations

1) Internal taxation measures
2) Non-fiscal internal measures
3) Environmental sustainability standards
Internal Taxation

Measures must:

- treat “like” imported and domestic products identically
- treat “directly competitive or substitutable” products in a similar way so as not to favor domestic production.

➔ US excise tax exemption for ethanol versus no exemption for products of foreign producers that are “like” ethanol?
Non-fiscal Internal Measures

→ some examples related to biofuels include:

1. Use mandates of particular quantity or percentage
2. Limits on proportion blended with conventional fuel
3. Specifications regarding performance/properties or from what material the fuel must be made from
4. Labeling for consumer protection or informational purposes
5. Health and safety regulations
6. Environmental performance requirements

→ If the two products are “like,” governments may still regulate so long as it does not result in less favorable treatment for the imported product
Environmental Sustainability Standards

Some examples related to biofuels:

1. Conditions that address the environmental impact of biofuels in the country of import

2. Conditions that seek to maximize the contribution of biofuels to reducing carbon emissions and thus look to the net effects of a particular fuel on carbon emissions throughout its entire life-cycle, including carbon emissions in the production and processing of the fuel

3. Conditions that go beyond carbon emissions to promoting sustainable agriculture in the country producing the feedstock or biofuel
Exceptions to the Rules

- Article XX “saves” measures that would otherwise be GATT-illegal if they serve certain public-policy objectives, which include protection of human health and conservation of exhaustible natural resources.
- Article XI (national security exception)
The TBT Agreement’s Application to Standards/Regulations

• Technical regulations must not be more trade restrictive than necessary to fulfill a legitimate objective (e.g., protection of human health/safety, or the environment).

• The Technical Barriers to Trade (TBT) Agreement admonishes members to use “international standards” as a basis for technical regulations, where possible.
  – A rebuttable presumption that the measure is “least trade restrictive” exists if the measure meets international standards.

• No standards exist yet for biofuels, but percentage blend requirements (limits on % ethanol) may not be scientifically justified for health/safety/environmental concerns under GATT.
The Application of the SPS Agreement to Standards/ Regulations

- The Sanitary and Phytosanitary Measures (SPS) Agreement applies to risks arising from trade in food and agricultural products.
- Some of its provisions could apply to transportation and trade of feedstocks for biofuels, including biomass or biowaste.
- Resolution of GMO dispute may have implications for biofuels.
Government Procurement

• The Government Procurement Agreement (GPA) may apply to policies and regulations that mandate government purchase/use of biofuels.

• Where GPA applies:
  – Requires no-less favorable treatment
  – Cannot use non-economic criteria for suppliers
  – Procurement specifications must be based on international standards, if available
WTO Summary

• Are the U.S. subsidies targeted to domestic ethanol and biodiesel production likely to be successfully challenged in the WTO?
IV. Key Issues in Wind Farms

- Land Use
- Insurance and Liability
- Lifestyle
- Revenue Options
- Taxes

-Thanks to Bryan Endres for preparing this section
Initial Considerations

- Some of the terms in a wind generation contract may limit your use of the property FOREVER, including your heirs and any other future owners.
- Consider short AND long-run implications of any agreement.
- Consult an attorney experienced in wind generation transactions.
- The following is an overview of SOME considerations you may wish to discuss with your attorney.
Specificity

• Designate specific location on the land
• Consider dividing out a parcel of the land for the area on which the turbine will be sited
• May need to coordinate with FSA once site determined
Easements

• Definition: an interest in land owned by another that entitles the easement holder to a specific use of the land

• Application in the wind-energy context
  – Access Easement
    • Build and maintain roads
    • Specify access rights (vehicles, pedestrians, others)
    • Specify when this easement might terminate (a determinable easement)
    • Specify which party is responsible to restore the area if the easement terminates and the extent of restoration
Maintenance Easements

• Who maintains the infrastructure necessary for operation of the turbines
  – Roads
  – Buildings (other structures)
  – Turbines and blades (including foundation)
Damage to Crop Production

- Loss of acres in production
- Damage to crops during construction/maintenance activities
- Drainage
  - Immediate impact on drainage tiles/flow
  - Future impact on topography
  - Impact on adjacent landowners
    - If there is a problem later, who pays to correct
- Soil Compaction
- Who determines extent of damage
  - Landowner-Energy Co.-Impartial 3rd party (e.g., insurance adjuster; extension agent)
- When is payment due for damages
Insurance

• During construction and operation
  – Wildlife
  – Ice buildup on blades
  – Personal injury; property damage; crop damage
  – Short and long-term need

• Indemnification for any liability

• Cost to defend the lawsuit

• Will your personal coverage needs change
The End of the Road

- Lifespan of the turbines
- Lifespan of the company
- Conditions to trigger obligation to remove
- Who will pay for removal
  - What if company’s “line of credit” no longer exists
  - Escrow money
  - Performance bond
  - Legislative fund similar to grain fund?
- Restoring land to productive use after removal / other damages to drainage incurred during removal
Lifestyle Considerations

- 400 ft. towers
- Turbines the size of school busses
- Blades similar to wingspan of 747
- Noise/View considerations
- Impact on farming operations
  - Can you still graze? Plant crops? Aerial spraying?
- Impact on neighbors
  - Nuisance lawsuit
  - Will your “wind print” take the neighbor’s land?
  - Aerial spraying by neighbors?
- Impact on your property value
Revenue Options

- Fixed annual lease
- Lump-sum, up-front payment
- Revenue sharing
- Combination of the above
- “Net Metering”
  - Invest in your own wind generation equipment
  - FY 2007 State of Illinois Grant Program
    - Wind Energy Production Development Program
Real Estate Taxes

• Who pays…developer or landowner… for improvements to land
• Protect against any liens on the property
• County-by-county differences in assessment;
  – Assessment Options
    • Personal vs real property
    • Agricultural, commercial, industrial?
    • Zoning issues
  – Statewide assessment standard possible, in the future
V. Coal Mining: New Extraction Methods have Increased Impact on Agricultural Land

• Discussion Topics
  – What is Long-Wall Mining
    • Also called “planned impact mining”
  – Common law right of support/subsidence
    • Is there case law about this in Illinois?
    • Is there a statute?
  – Similar issues involved with oil wells and other mining operations

-Thanks to Bryan Endres for preparing this section
What is “Long Wall Mining”

- Instead of coal pillars, the long wall mining system uses a line of moving hydraulic jacks to support the roof temporarily in the mining area. No coal pillars are present to obstruct work, so a large coal-cutting machine cuts coal continuously along a wall face typically about 180 m (590 ft) wide. This massive coal-cutting machine works like a wood power saw, shredding coal from the wall in strips about 50 to 75 cm (about 20 to 30 in) wide. As the coal-cutting machine strips layers of coal from the wall face like a meat cutter, the line of roof-supporting hydraulic jacks moves automatically behind the machine. As the hydraulic jacks move forward, the roof is allowed to collapse behind the equipment.

- Long wall mining produces **four to five times more coal** (90% vs. 50%) from a given deposit than the room-and-pillar method because coal pillars are not built. But because long wall mining causes the land to sink, land use regulations prohibit this practice in many areas. Despite this prohibition, long wall mining still accounts for about 30 percent of the coal mined in the United States.

- James Speight, B.S., Ph.D.
Long Wall Mining Operation

Note the hydraulic lifts that support the ceiling.
Subsidence occurs after hydraulic supports removed

- Inspection of subsidence from long wall mining operation; area fenced off to prevent cattle from falling into subsidence crevice.
Legality of Long Wall Mining

- Method is legal in Illinois and has been used in southern Illinois for some time
- Permit required from IDNR and mining company must present a subsidence plan
- Key concern is drainage
- Land must be returned to a condition capable of supporting previous uses
- Compensation for crop loss until repairs complete
- Structures repaired, replaced or compensated for value

- Mine operator usually doesn’t control surface above the coal.
- Mine operator may have the right to extract coal, but not intentionally subside the surface.
- Mine operator may need to reach a separate subsidence agreement with surface owners.
- Many deeds/lease agreements are *very* old and unclear on issues of subsidence.
  - IDNR will not adjudicate title issues.
  - MUST seek legal counsel if unclear of rights.
  - Find legal counsel experienced in mineral law.
- Good idea to seek legal counsel if approached to sell mineral rights or right to subside.
VI. The Electric Power Grid: Utility Easements and Agriculture

• With concerns about the adequacy of the electric power grid, and
• With new electricity generating capacity coming on line,
• How will the new utility easements be acquired and what will be the impact on farming operations?

–Thanks to Don Uchtmann for preparing this topic
Can easements for power lines be acquired by Eminent Domain?

- Yes, generally
- Usually, a utility must obtain a Certificate of Public Convenience and Necessity from the Illinois Commerce Commission before it may construct a new utility line
  - Special Proceeding before the ICC (220 ILCS 5/8-406)
  - Must prove utility line is in the public interest
- Before a utility can condemn land for a right-of-way, it must obtain an Order from the ICC (220 ILCS 5/8-503)
  - Utility must prove … good faith effort to acquire necessary easement by voluntary acquisition …
  - And that all property interests sought are actually needed
Are the Easements Negotiable?

• Yes (location, access, types of structures, compensation)
  – Utility companies often willing to accommodate the reasonable concerns of landowners
  – Utility companies usually prefer to purchase the right of way voluntarily and not condemn it

• Assistance by an attorney may be very helpful to the landowner (once landowner grants a permanent easement, its too late to get a better deal!)
Does the IL Dept. of Agriculture help minimize adverse effects on farmland?

- **IDOA ELECTRIC TRANSMISSION LINE CONSTRUCTION STANDARDS AND POLICIES for Ag Impact Mitigation**
- [www.agr.state.il.us/Environment/LandWater/electrictransmissionlineconstructionstds.pdf](http://www.agr.state.il.us/Environment/LandWater/electrictransmissionlineconstructionstds.pdf)
- **Examples**
  - Only single pole support structures to be used
  - Utility will chisel to a depth of 18 inches all cropland, which has been traversed by construction equipment to alleviate compaction impacts ….
- **This sets the floor, but landowners may be able to negotiate more stringent protections**
The End – Thank You
Energy and Agriculture: Tax and Legal Perspectives

By Don Uchtmann, Bryan Endres & Gary Hoff
Part of farmdoc’s Farm Income 2007 seminars
Crop Insurance and Risk Management in the Current Price Environment
Bruce Sherrick, Scott Irwin, and Gary Schnitkey
Department of Agricultural and Consumer Economics
University of Illinois at Urbana-Champaign

Executive Summary
After attending this session, farmers will be able to more appropriately select the crop insurance products and coverage levels for their farm.

- The session will begin with a description of crop insurance products. The following products will be described: Actual Production History (APH), Revenue Assurance (RA), Crop Revenue Coverage (CRC), Group Risk Plan (GRP), and Group Risk Income Plan (GRIP) insurance. Descriptions will include example calculations of indemnity’s payments from each product.

- Use of crop insurance products over time will be compared. In Illinois, use of Group Risk Income Plan insurance products has increased dramatically in the past several years.

- This session will compare the strengths and weaknesses of alternative crop insurance products. In particular, group insurance plans will be compared to individual farm plans.

- Tools available on farmdoc for making crop insurance decisions will be described. These tools include Premium Calculator, Historical Payout Estimator, What-if Tool, and an Insurance Evaluator.

- Guidelines for crop insurance choice will be given. Revenue products without guarantee increases (IP, RA-BP) should be used by farmers that do not aggressively hedge crops prior to harvest. Revenue products with guarantee increases (CRC, RA-HP) should be used by farmers who hedge aggressively prior to harvest. County level products (GRP, GRIP) are excellent choices for farmstead in strong financial position and whose yields tracked the county yield.
Crop Insurance and Risk Management in the Current Price Environment

Bruce Sherrick, Scott Irwin, and Gary Schnitkey

http://www.farmdoc.uiuc.edu/
Overview of Workshop

• Current trends in crop insurance usage in Illinois
  – market shares through time, by product
  – expected impacts of current price environment

• Understanding alternatives and options
  – available products
  – payout calculations

• Tools for evaluating crop insurance for your farm
  – Premium Calculator on farmdoc website
  – Marketing and Crop Insurance Model (FAST tool)
  – Insurance Evaluator on farmdoc website
  – What if (Scenario analysis) on farmdoc website
### Acres Insured, Illinois, Corn

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<td>1995</td>
<td>8,726,950</td>
<td>8,726,950</td>
<td>748,708</td>
<td>16,458</td>
<td>6,354,579</td>
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<tr>
<td>1996</td>
<td>7,370,151</td>
<td>7,370,151</td>
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<tr>
<td>1997</td>
<td>5,589,413</td>
<td>5,589,413</td>
<td>1,123,761</td>
<td>24,859</td>
<td>6,318,369</td>
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<tr>
<td>1998</td>
<td>3,452,345</td>
<td>3,452,345</td>
<td>3,113</td>
<td>46,460</td>
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<td>1999</td>
<td>2,664,724</td>
<td>2,664,724</td>
<td>4,053</td>
<td>140,218</td>
<td>7,538,876</td>
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<td>2000</td>
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<td>203,908</td>
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<td>2001</td>
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<td>1,774,562</td>
<td>289,561</td>
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<tr>
<td>2002</td>
<td>1,641,601</td>
<td>1,641,601</td>
<td>308,223</td>
<td>930,760</td>
<td>8,615,436</td>
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<tr>
<td>2003</td>
<td>939,612</td>
<td>939,612</td>
<td>3,264,478</td>
<td>8,943,472</td>
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</table>
## Acres Insured, Illinois, Soybeans

<table>
<thead>
<tr>
<th>Year</th>
<th>APH</th>
<th>CRC</th>
<th>IP andRA</th>
<th>GRP</th>
<th>GRIP</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>1995</td>
<td>8,080,484</td>
<td>507,785</td>
<td>4,569</td>
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<tr>
<td>1996</td>
<td>6,464,765</td>
<td>711,759</td>
<td>12,939</td>
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<td>6,464,765</td>
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<tr>
<td>1997</td>
<td>5,077,072</td>
<td>507,785</td>
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<td>1998</td>
<td>5,121,161</td>
<td>711,759</td>
<td>12,939</td>
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<td></td>
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<td>1999</td>
<td>3,971,186</td>
<td>2,332,958</td>
<td>13,478</td>
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<td>2000</td>
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<td>3,149,381</td>
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<tr>
<td>2001</td>
<td>3,348,905</td>
<td>3,253,661</td>
<td>77,304</td>
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<td>6,707,019</td>
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<tr>
<td>2003</td>
<td>2,861,448</td>
<td>3,377,863</td>
<td>208,924</td>
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<td>2004</td>
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<td>3,781,486</td>
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<td>407,243</td>
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<td>6,448,181</td>
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<td>2005</td>
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<td>4,174,738</td>
<td>315,099</td>
<td>866,285</td>
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<tr>
<td>2006</td>
<td>1,274,730</td>
<td>4,277,688</td>
<td>339,001</td>
<td>1,614,980</td>
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<td>7,506,399</td>
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## Premiums, Payments, Loss Ratios by Crop, 1995 to 2005 by Crop

<table>
<thead>
<tr>
<th>Crop</th>
<th>Total Premium</th>
<th>Payments Minus Farmer-Paid Premium</th>
<th>Loss Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>$8,663,068,283</td>
<td>$1,868,752,682</td>
<td>0.68</td>
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<tr>
<td>Soybeans</td>
<td>5,346,885,430</td>
<td>1,574,312,770</td>
<td>0.74</td>
</tr>
<tr>
<td>Fruits and vegetables</td>
<td>2,363,727,988</td>
<td>1,260,696,951</td>
<td>0.85</td>
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<tr>
<td>Potatoes</td>
<td>579,603,620</td>
<td>298,487,944</td>
<td>0.90</td>
</tr>
<tr>
<td>Nursery</td>
<td>397,721,162</td>
<td>296,313,435</td>
<td>0.90</td>
</tr>
<tr>
<td>Other</td>
<td>623,116,677</td>
<td>422,581,615</td>
<td>1.02</td>
</tr>
<tr>
<td>Sugar Beets</td>
<td>327,746,499</td>
<td>183,133,449</td>
<td>1.02</td>
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<tr>
<td>Wheat</td>
<td>4,332,281,302</td>
<td>2,862,620,024</td>
<td>1.10</td>
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<tr>
<td>Cotton</td>
<td>3,615,786,256</td>
<td>2,606,177,757</td>
<td>1.11</td>
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<tr>
<td>Other grains</td>
<td>1,169,217,061</td>
<td>847,677,316</td>
<td>1.14</td>
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<tr>
<td>AGR</td>
<td>51,628,184</td>
<td>42,224,905</td>
<td>1.25</td>
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<tr>
<td>Peanuts</td>
<td>440,911,913</td>
<td>373,437,276</td>
<td>1.32</td>
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<tr>
<td>Grain sorghum</td>
<td>709,136,368</td>
<td>678,471,495</td>
<td>1.38</td>
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<tr>
<td>Tobacco</td>
<td>397,367,562</td>
<td>660,806,811</td>
<td>2.14</td>
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</table>
# Premiums, Payments, Loss Ratios for Corn, 1995 to 2005 by State

<table>
<thead>
<tr>
<th>State</th>
<th>Total Premium</th>
<th>Payments Minus Farmer-Paid Premium</th>
<th>Loss Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td>$1,448,224,763</td>
<td>-$237,339,250</td>
<td>0.35</td>
</tr>
<tr>
<td>Illinois</td>
<td>1,112,582,499</td>
<td>39,438,013</td>
<td>0.54</td>
</tr>
<tr>
<td>Nebraska</td>
<td>1,041,003,003</td>
<td>251,353,058</td>
<td>0.72</td>
</tr>
<tr>
<td>Minnesota</td>
<td>956,678,670</td>
<td>-156,600,667</td>
<td>0.30</td>
</tr>
<tr>
<td>South Dakota</td>
<td>647,838,398</td>
<td>310,133,430</td>
<td>0.93</td>
</tr>
<tr>
<td>Indiana</td>
<td>571,216,269</td>
<td>98,977,828</td>
<td>0.69</td>
</tr>
<tr>
<td>Kansas</td>
<td>376,994,307</td>
<td>234,847,588</td>
<td>1.08</td>
</tr>
<tr>
<td>Missouri</td>
<td>355,437,717</td>
<td>123,974,556</td>
<td>0.75</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>322,198,732</td>
<td>115,862,611</td>
<td>0.78</td>
</tr>
<tr>
<td>Ohio</td>
<td>280,030,309</td>
<td>160,756,829</td>
<td>1.05</td>
</tr>
<tr>
<td>Texas</td>
<td>258,957,963</td>
<td>224,916,098</td>
<td>1.27</td>
</tr>
<tr>
<td>North Dakota</td>
<td>205,455,384</td>
<td>140,497,352</td>
<td>1.09</td>
</tr>
<tr>
<td>Other States</td>
<td>1,086,450,269</td>
<td>561,935,236</td>
<td>0.77</td>
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</tbody>
</table>
Loss Ratios, Corn, 1995 to 2005
# Premiums, Payments, Loss Ratios for Soybeans, 1995 to 2005 by State

<table>
<thead>
<tr>
<th>State</th>
<th>Total Premium</th>
<th>Payments Minus Farmer-Paid Premium</th>
<th>Loss Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td>$734,129,900</td>
<td>$90,818,490</td>
<td>0.63</td>
</tr>
<tr>
<td>Minnesota</td>
<td>692,727,222</td>
<td>173,977,222</td>
<td>0.75</td>
</tr>
<tr>
<td>Illinois</td>
<td>544,945,252</td>
<td>13,107,933</td>
<td>0.48</td>
</tr>
<tr>
<td>South Dakota</td>
<td>425,908,028</td>
<td>173,291,222</td>
<td>0.59</td>
</tr>
<tr>
<td>Nebraska</td>
<td>398,055,628</td>
<td>64,627,926</td>
<td>0.65</td>
</tr>
<tr>
<td>Missouri</td>
<td>360,987,432</td>
<td>88,904,932</td>
<td>0.62</td>
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<tr>
<td>Indiana</td>
<td>342,122,391</td>
<td>28,819,289</td>
<td>0.58</td>
</tr>
<tr>
<td>North Dakota</td>
<td>252,966,927</td>
<td>152,304,945</td>
<td>1.04</td>
</tr>
<tr>
<td>Ohio</td>
<td>251,105,969</td>
<td>80,294,133</td>
<td>0.79</td>
</tr>
<tr>
<td>Kansas</td>
<td>238,957,882</td>
<td>137,042,756</td>
<td>1.02</td>
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<tr>
<td>Arkansas</td>
<td>197,656,695</td>
<td>66,884,917</td>
<td>0.57</td>
</tr>
<tr>
<td>Other States</td>
<td>907,322,104</td>
<td>504,239,005</td>
<td>1.05</td>
</tr>
</tbody>
</table>
Loss Ratios, Soybeans, 1995 to 2005
Understanding Alternatives/Options:

Multi-Peril Insurance:

1. Farm-based products
   - Actual Production History (APH)
   - Income Protection (IP)
   - Revenue Assurance (RA)
   - Crop Revenue Coverage (CRC)

2. County-level or Group products
   - Group Risk Plan (GRP)
   - Group Risk Income Plan (GRIP)
   - Group Risk Income Plan, Harvest Price option (GRIP-HP)
Farm Insurance Products

1. Yield insurance
   -- Actual Production History (APH)

2. Revenue without guarantee increase
   -- Income Protection (IP)
   -- Revenue Assurance -- Base Price (RA-BP)

3. Revenue with guarantee increase
   -- Crop Revenue Coverage (CRC)
   -- Revenue Assurance -- Harvest Price (RA-HP)
County-Level Products

1. Yield insurance
   -- Group Risk Plan (GRP)

2. Revenue without guarantee increase
   -- Group Risk Income Plan (GRIP)

3. Revenue with guarantee increase
   -- GRIP-HR
APH Yield Guarantee

APH yield 140 bu.
Yield election 75%
Price $2.50

Yield guarantee 105 bu.
(140 bu. X .75)
## APH Indemnity Payment

<table>
<thead>
<tr>
<th></th>
<th><strong>105 bu.</strong></th>
<th><strong>$2.50</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Yield guarantee</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Indemnity price</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Actual yield</strong></td>
<td><strong>100 bu.</strong></td>
<td><strong>$12.50</strong></td>
</tr>
<tr>
<td><strong>Payment</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**$12.50 = (105 
guarantee−100 
bu yield)x2.50**
IP (RA-BP) Revenue Guarantee

APH yield 140 bu.
Base price $2.32
Coverage level 75 %

Revenue guarantee $243
(140 bu. x $2.32 x .75)
Prices for Revenue Insurance Products

“Base” Prices:
Corn -- CBOT Dec. contract avg. in February
Soybeans -- CBOT Nov. contract avg. in Feb.

“Harvest” Prices:
Corn -- CBOT Dec. avg in October (CRC, GRIP) and November (RA)
Soybeans -- CBOT Nov. contract avg. in October
IP (RA-BP) Gross Revenue

Harvest price $2.05
Actual yield 100 bu.

Gross revenue $205 **

** $205 = $2.05 \times 100 \text{ bu.}
IP (RA-BP) Indemnity Payment

Revenue guarantee $243
Gross revenue $205

Indemnity payment $38 **

** (revenue guarantee – gross revenue)
Crop Revenue Coverage

Revenue Assurance – Harvest Price

- Revenue insurance (pays when below a revenue guarantee)

- Increase in revenue guarantee

- Increase in guarantee good for “aggressive” users of forward contracts or futures contracts
CRC (RA-HP) Revenue Guarantee

APH yield: 140 bu.
Base price: $2.32
Coverage level: 75 percent

Revenue guarantee (harvest price < $2.32)
$243 = 140 bu. x $2.32 x .75

Revenue guarantee (harvest price > $2.32)
Harvest price = $2.80
$294 = 140 bu. x $2.80 x .75
## CRC (RA-HP) Gross Revenue and Payment

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvest price</td>
<td>$2.00</td>
</tr>
<tr>
<td>Actual yield</td>
<td>100 bu.</td>
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<tr>
<td>Gross revenue</td>
<td>$200</td>
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<tr>
<td>Revenue guarantee</td>
<td>$243</td>
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<tr>
<td>Payment (243 – 200)</td>
<td>$43</td>
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</table>
CRC (RA-HP) Gross Revenue and Payment

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Harvest price</td>
<td>$2.80</td>
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<tr>
<td>Actual yield</td>
<td>100 bu.</td>
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<tr>
<td>Gross revenue</td>
<td>$280</td>
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<td>Revenue guarantee</td>
<td>$294</td>
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<tr>
<td>Payment (294 – 280)</td>
<td>$14</td>
</tr>
</tbody>
</table>
Group Plans

- Group Risk Plan (GRP) – yield insurance
- Group Risk Income Plan without revenue option (GRIP-NoHR) – revenue insurance
- Group Risk Income Plan with revenue option (GRIP-HR) – revenue insurance (New)

Pay based on county yields, not farm yields
See crop insurance section of farmdoc for county info (www.farmdoc.uiuc.edu)
Logan County Example

County: Logan
Crop: Corn

Expected yield: 161.4
GRP max protection level: $533
GRIP max protection level: $709 *

* Estimated (1.5 x expected yield x expected price)
Group Choices

- Coverage level (70 to 90 %)

- Protection level (60 to 100% of maximum)

Suggest buying 90% coverage level, vary protection level depending on how much you want to pay in premium
Guarantees

GRP – Yield guarantee

Expected yield x coverage level
161.4 x .90 = 145 bu.
GRP Payment

- Protection level x yield shortfall

- Example (127 bu actual yield, 145 bu. trigger yield)
  
  Yield shortfall = .124
  
  = (145 bu – 127 bu) / 145
  
  Payment = protection l. x yield short.
  
  Payment = $533 x .124 = $66
GRIP Guarantees

GRIP-NoHR – guarantee
exp. yield x expected price x coverage level
161.4 x 2.93 x .90 = $426

GRIP-HR – guarantee
exp. yield x higher of expected price or harvest price x coverage level
GRIP-NoHR Payment

- Protection level x revenue shortfall
- Example ($1.99 price, 200 bu yield, $398 county revenue)
- Trigger revenue = 161.4 x 2.93 x .90 = $426
  Shortfall = .066 = ($426 - $398) / $426
  Payment = $46 = $709 x .066
GRIP-HR Payment

• Protection level x revenue shortfall x factor

factor = higher of 1 or 
harvest price / expected price
GRIP-HR Payment

- Protection level x revenue shortfall x factor
- Example ($3.25 price, 125 yield, $406 county revenue)

Trigger revenue = $472 = 161.4 x 3.25 x .9
Shortfall = .140 = ($472 - $406) / $472
Factor = ($3.25 / $2.93) = 1.11
Payment = $110 = $709 x .139 x 1.11
GRIP-HR Payment

- Protection level x revenue shortfall x factor
- Example ($2.25 price, 170 yield, $383 county revenue)

\[
\text{Trigger revenue} = \$426 = 161.4 \times 2.93 \times 0.90
\]
\[
\text{Shortfall} = 0.101 = \frac{\$426 - \$383}{\$426}
\]
\[
\text{Factor} = 1 \text{ (har. price less than exp. Price)}
\]
\[
\text{Payment} = \$72 = \$709 \times 0.101 \times 1
\]
Payment Examples (90% coverage level)

Drought year in Logan County (2.93 expected price, 161.4 expected yield, $709 protection level for GRIP)

Harvest price = $3.20
Logan county yield = 130

Payments:
GRP = $37
GRIP-NoHR = $0
GRIP-HR = $54
Location Specific Workshop packets distributed at each Meeting Location....

(a few examples from Sangamon County included in proceedings)
Premium Calculator

• Available in crop insurance section of farmdoc (www.farmdoc.uiuc.edu)

• Calculates premiums for:
  – All available multi-peril products
  – All available coverage levels
  – Basic, optional, enterprise units
**Premium Calculator:**

http://www.farmdoc.uiuc.edu/cropins/index.asp

### 2006 iFARM Crop Insurance Premium Calculator: North Central Region Crops

**Describe insurance policy:**

- **Illinois**
- **Sangamon**
- **Corn**

**APH Yield**

167

*(Actual Production History Yield) in bu./acre*

**Submit**

Making the following selections and clicking on "SUBMIT" will provide estimated insurance premiums per acre. These are not quotes. A number of assumptions had to be made to estimate the following per acre premiums. These assumptions will not be applicable to all farms. Actual quotes must be obtained from qualified insurance agents.

The above selections will give farmer-paid premiums for basic units. Premiums also are available for other units. These selections are made on the next web page.
**Farmer-Paid Premiums Per Acre for Sangamon County, Illinois, 2006**

(Crop = Corn, APH Yield = 167 bu., Unit = Basic, Protection Level = 100%, Practice = non-irrigated, APH Price = 2, RA Price = 2.59, and CRC Price = 2.59)

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>APH ($/acre)</th>
<th>RA-BP ($/acre)</th>
<th>RA-HP ($/acre)</th>
<th>CRC ($/acre)</th>
<th>GRP ($/acre)</th>
<th>GRIP ($/acre)</th>
<th>GRIP-HP ($/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>0.66</td>
<td></td>
<td></td>
<td>1.58</td>
<td></td>
<td></td>
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<tr>
<td>55%</td>
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<td>2.22</td>
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<tr>
<td>60%</td>
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<td>3.00</td>
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<tr>
<td>65%</td>
<td>1.96</td>
<td>2.27</td>
<td>3.76</td>
<td>4.51</td>
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<td></td>
</tr>
<tr>
<td>70%</td>
<td>2.66</td>
<td>4.05</td>
<td>6.23</td>
<td>6.13</td>
<td>1.18</td>
<td>1.48</td>
<td>2.51</td>
</tr>
<tr>
<td>75%</td>
<td>3.86</td>
<td>7.02</td>
<td>10.35</td>
<td>9.00</td>
<td>1.37</td>
<td>2.43</td>
<td>4.18</td>
</tr>
<tr>
<td>80%</td>
<td>5.79</td>
<td>11.93</td>
<td>17.08</td>
<td>13.74</td>
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<td>6.04</td>
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<tr>
<td>85%</td>
<td>8.80</td>
<td>19.94</td>
<td>27.95</td>
<td>21.50</td>
<td>3.39</td>
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<tr>
<td>90%</td>
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<td></td>
<td>6.12</td>
<td>18.03</td>
<td>22.67</td>
<td></td>
</tr>
</tbody>
</table>

To generate a new table, select the variables below and click here **Recalculate**

Disclaimer:
The above are estimated insurance premiums per acre. These are not quotes. A number of assumptions had to be made to estimate the per acre premiums. These assumptions will not be applicable to all farms. Actual quotes must be obtained from qualified insurance agents.
**Farmer-Paid Premiums Per Acre for Sangamon County, Illinois, 2006**

(Crop = Corn, APH Yield = 167 bu., Unit = Enterprise, Protection Level = 100%, Practice = non-irrigated, APH Price = 2, RA Price = 2.59, and CRC Price = 2.59)

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>APH ($/acre)</th>
<th>RA-BP ($/acre)</th>
<th>RA-HP ($/acre)</th>
<th>CRC ($/acre)</th>
<th>GRP ($/acre)</th>
<th>GRIP ($/acre)</th>
<th>GRIP-HP ($/acre)</th>
</tr>
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<tbody>
<tr>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td>1.34</td>
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<tr>
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<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>2.53</td>
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</tr>
<tr>
<td>65%</td>
<td>1.78</td>
<td>3.14</td>
<td></td>
<td>3.80</td>
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<tr>
<td>70%</td>
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<td>5.40</td>
<td></td>
<td>5.17</td>
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<tr>
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<td>6.01</td>
<td>9.02</td>
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<td>24.11</td>
<td></td>
<td>18.15</td>
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<td></td>
<td></td>
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<tr>
<td>90%</td>
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</tbody>
</table>

To generate a new table, select the variables below and click here "Recalculate"

If you want to change the price, click here "Change" Click here to cancel "Cancel"

<table>
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<tr>
<th>County</th>
<th>Crop</th>
<th>APH Yield</th>
<th>Unit</th>
<th>Protection Level</th>
<th>Practice</th>
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<tr>
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<td>Corn</td>
<td>167</td>
<td>Enterprise</td>
<td>100</td>
<td>Select Practice</td>
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</table>

Acre: 550.0 & Above ac  Section: 5
Insurance Evaluator

• Available on farmdoc in the crop insurance section

• Shows an evaluation of farm level products for one example farm in the county

• Compares risks and returns of the products.
Individual Locations covered at each Meeting Location….

(Sangamon County examples included in proceedings)
Farm-level Analysis (simulation)

Needed items:

• Yield distribution for farm/county
• Price distribution for harvest
• Yield-Price Relationships
• Insurance elections, local conditions (e.g., basis)

“It’s tough to make predictions, especially about the future.”

-- Yogi Berra
Historic Yields – Sangamon County Illinois
Sangamon County farm (see FAST tool)

Yield and Yield Risk
Information for Illinois Farmers

1. Select Location
   Sangamon

2. Select Crop
   Corn

Historical Data: bu./acre
- Average Yield, 1972-2005: 140.7
- Detrended Ave. (base 2006): 168.1
- Ave increase/year - county: 1.757
- Ave increase/year - state: 1.684

Historic Yields

- Sangamon Co. Yield
- Trend Yield

Graph showing yield data from 1972 to 2006.
Sangamon County farm (see FAST tool)

Farm yields in Sangamon will be between 140.63 and 200.55 bu. acre 79.54% of the time.
Prices from futures/options markets, adjusted for local basis
Historic Price vs. Yields – Sangamon County

[Graph showing the relationship between price per bushel and yield per acre.]
Historical Evaluator – *(live version presented at workshops)*

<table>
<thead>
<tr>
<th>Year</th>
<th>APH 75%</th>
<th>APH 85%</th>
<th>RA-BP 75%</th>
<th>RA-BP 85%</th>
<th>RA-HP 75%</th>
<th>RA-HP 85%</th>
<th>CRC 85%</th>
<th>GRP 90%</th>
<th>GRIP-BP 90%</th>
<th>GRIP-HP 90%</th>
<th>GRIP-HP 85%</th>
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<td>79.10</td>
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Insurance payments are adjusted to 2006 conditions. Because of these adjustments, the above simulated payments will not exactly match historical payments.
### Historical Evaluator – *(live version presented at workshops)*

#### Per Acre Gross Revenue By Year, Corn

<table>
<thead>
<tr>
<th>Year</th>
<th>APH 75%</th>
<th>APH 95%</th>
<th>RA-OP 75%</th>
<th>RA-OP 95%</th>
<th>RA-HP 75%</th>
<th>RA-HP 95%</th>
<th>CRC 95%</th>
<th>GRP 90%</th>
<th>GRP-OP 90%</th>
<th>GRP-HP 90%</th>
<th>GRP-HP 95%</th>
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<td>356</td>
<td>368</td>
<td>373</td>
<td>368</td>
<td>362</td>
</tr>
</tbody>
</table>

**Average**

|          | $397 | $394 | $394 | $391 | $393 | $386 | $393 | $404 | $408 | $413 | $407 |

**% of time revenue below:**

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<th></th>
<th>$300</th>
<th>$325</th>
<th>$350</th>
<th>$385</th>
<th>$420</th>
<th>$465</th>
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<td>0%</td>
<td>0%</td>
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<td>6%</td>
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<td>18%</td>
<td>18%</td>
<td>9%</td>
<td>12%</td>
<td>12%</td>
</tr>
</tbody>
</table>

**Low revenue**

|            | $308 | $314 | $305 | $318 | $302 | $311 | $317 | $310 | $296 | $297 | $300 |
Historical Evaluator

-in combination with Marketing options, allows you to investigate the interaction between insurance, crop revenue, and marketing alternatives

<table>
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<th>Insurance contract</th>
<th>None</th>
<th>APH 85%</th>
<th>CRC 85%</th>
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<th>GRIP-HP 90%</th>
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Average revenue: $393 | $406 | $394 | $409 | $422
Lowest revenue: $255 | $301 | $303 | $289 | $280

Chance of revenue below:

- $250: 0% 0% 0% 0% 0%
- $300: 3% 0% 0% 3% 3%
- $350: 16% 10% 35% 16% 3%
Putting it all together…

The *iFARM* Crop Insurance Evaluator uses a sophisticated risk simulation engine to evaluate a range of popular insurance products for corn & soybeans case farms in all counties in the selected state. It provides information about premiums, chance of payments, average gross revenue and risk impacts.

See Handout for Location-Specific Information
## Case Farm Description, Sangamon

### 1. Select County
Sangamon

### 2. Select Crop
Corn

#### Case Farm Information

<table>
<thead>
<tr>
<th>County: Sangamon</th>
<th>Crop: Corn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Average Yield</td>
<td>173.5 bu./acre</td>
</tr>
<tr>
<td>Farm St. Dev. of yield</td>
<td>23.75 bu./acre</td>
</tr>
<tr>
<td>County Average Yield</td>
<td>173.5 bu./acre</td>
</tr>
<tr>
<td>County St. Dev. of yield</td>
<td>19.08 bu./acre</td>
</tr>
<tr>
<td>Average Futures Price</td>
<td>$2.65/bu</td>
</tr>
<tr>
<td>St. Dev. of Price</td>
<td>$0.63/bu</td>
</tr>
<tr>
<td>Local Cash Basis</td>
<td>$0.27/bu</td>
</tr>
</tbody>
</table>

#### Farm Yield County Yield

<table>
<thead>
<tr>
<th>% of Years Yields Below</th>
<th>30%</th>
<th>20%</th>
<th>10%</th>
<th>5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Yield, bu./acre</td>
<td>162.98</td>
<td>154.44</td>
<td>141.69</td>
<td>130.46</td>
</tr>
<tr>
<td>County Yield, bu./acre</td>
<td>165.36</td>
<td>158.46</td>
<td>148.00</td>
<td>138.62</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Farm APH, bu./acre</th>
<th>173</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Gross Crop Rev., $/acre</td>
<td>423.51</td>
</tr>
</tbody>
</table>

#### VARs

<table>
<thead>
<tr>
<th>% above =</th>
<th>90%</th>
<th>85%</th>
<th>80%</th>
<th>75%</th>
<th>70%</th>
<th>50%</th>
<th>Enter custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>% below =</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>50%</td>
<td>5.00%</td>
</tr>
<tr>
<td>Farm Yield</td>
<td>141.69</td>
<td>148.92</td>
<td>154.44</td>
<td>159.00</td>
<td>162.98</td>
<td>175.89</td>
<td>130.46</td>
</tr>
<tr>
<td>County Yield</td>
<td>148.00</td>
<td>153.95</td>
<td>158.46</td>
<td>162.16</td>
<td>165.36</td>
<td>175.66</td>
<td>138.62</td>
</tr>
<tr>
<td>Price</td>
<td>$1.90</td>
<td>$2.01</td>
<td>$2.11</td>
<td>$2.19</td>
<td>$2.27</td>
<td>$2.57</td>
<td>$1.74</td>
</tr>
<tr>
<td>Crop Rev./acre</td>
<td>$329.84</td>
<td>$345.24</td>
<td>$356.05</td>
<td>$365.28</td>
<td>$373.54</td>
<td>$407.55</td>
<td>$306.96</td>
</tr>
</tbody>
</table>
The iFARM Crop Insurance Evaluator provides an evaluation of alternative crop insurance choices for a case farm in the county and for the crop you selected. The case farm is intended to mimic conditions of a typical farm in each county and is based on data from NASS, farm recordkeeping associations, and research at the University of Illinois relating farm to county yields. Farm yields vary due to weather and other factors. The following table contains average yields and information to help understand the variability of yields for the farm and the county in which it is contained.

<table>
<thead>
<tr>
<th>Case Information:</th>
<th>Farm</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Yield</td>
<td>173 bu/acre</td>
<td>173 bu/acre</td>
</tr>
<tr>
<td>30% of the years yields will be below</td>
<td>163 bu/acre</td>
<td>165 bu/acre</td>
</tr>
<tr>
<td>20% of the years yields will be below</td>
<td>154 bu/acre</td>
<td>159 bu/acre</td>
</tr>
<tr>
<td>10% of the years yields will be below</td>
<td>142 bu/acre</td>
<td>148 bu/acre</td>
</tr>
<tr>
<td>5% of the years yields will be below</td>
<td>130 bu/acre</td>
<td>139 bu/acre</td>
</tr>
</tbody>
</table>

Other information used in the analysis:

<table>
<thead>
<tr>
<th>APH Indemnity Price</th>
<th>$2.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRIP Price</td>
<td>$2.00</td>
</tr>
<tr>
<td>CRC, RA Base Price</td>
<td>$2.59</td>
</tr>
<tr>
<td>GRIP Base Price</td>
<td>$2.59</td>
</tr>
<tr>
<td>Futures Price ($/bu.)</td>
<td>$2.55</td>
</tr>
<tr>
<td>Cash Basis ($/bu.)</td>
<td>$0.27</td>
</tr>
<tr>
<td>Farm APH</td>
<td>173 bu/acre</td>
</tr>
</tbody>
</table>
Comparison of crop insurance premiums - Sangamon

This table contains estimates of the farmer paid per acre premium costs of various crop insurance products by coverage election level to help provide a sense of the differences in costs among insurance alternatives. Actual premiums may vary slightly, and other unit and practice options may exist. A qualified insurance agent should be consulted for actual crop insurance quotes.

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>APH</th>
<th>RA-BP</th>
<th>RA-HP</th>
<th>CRC</th>
<th>GRP</th>
<th>GRIP-NoHR</th>
<th>GRIP-HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>55%</td>
<td>0.94</td>
<td></td>
<td></td>
<td>2.22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td>1.28</td>
<td></td>
<td></td>
<td>3.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65%</td>
<td>1.93</td>
<td>2.22</td>
<td>3.70</td>
<td>4.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70%</td>
<td>2.61</td>
<td>4.01</td>
<td>6.22</td>
<td>6.12</td>
<td>1.18</td>
<td>1.48</td>
<td>2.51</td>
</tr>
<tr>
<td>75%</td>
<td>3.79</td>
<td>7.02</td>
<td>10.39</td>
<td>8.99</td>
<td>1.37</td>
<td>2.43</td>
<td>4.18</td>
</tr>
<tr>
<td>80%</td>
<td>5.69</td>
<td>11.99</td>
<td>17.22</td>
<td>13.72</td>
<td>2.40</td>
<td>6.05</td>
<td>8.31</td>
</tr>
<tr>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td>6.12</td>
<td>18.04</td>
<td></td>
<td>22.67</td>
</tr>
</tbody>
</table>
This table contains estimates of the farmer paid per acre premium costs of various crop insurance products by coverage election level to help provide a sense of the differences in costs among insurance alternatives. Actual premiums may vary slightly, and other unit and practice options may exist. A qualified insurance agent should be consulted for actual crop insurance quotes.
**Comparison of crop insurance payments - Sangamon**

This table shows the average per acre indemnity payments by product and election level under the assumptions of the case farm described above. Payments can vary significantly from year to year depending on prices and yields, with many years generating no payments, and some years generating much higher payments. The averages shown are the long run values that would be expected to occur when averaged over a large number of years.

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>APH</th>
<th>RA-BP</th>
<th>RA-HP</th>
<th>CRC</th>
<th>GRP</th>
<th>GRIP-NoHR</th>
<th>GRIP-HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>55%</td>
<td>0.05</td>
<td>0.91</td>
<td>1.45</td>
<td>0.17</td>
<td>0.60</td>
<td>3.05</td>
<td>4.06</td>
</tr>
<tr>
<td>60%</td>
<td>0.13</td>
<td>0.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65%</td>
<td>0.27</td>
<td>2.07</td>
<td>3.12</td>
<td>1.21</td>
<td>2.58</td>
<td>11.53</td>
<td>15.42</td>
</tr>
<tr>
<td>70%</td>
<td>0.57</td>
<td>4.13</td>
<td>6.02</td>
<td>2.67</td>
<td>1.28</td>
<td>6.25</td>
<td>8.33</td>
</tr>
<tr>
<td>75%</td>
<td>1.14</td>
<td>7.42</td>
<td>10.63</td>
<td>5.30</td>
<td>9.60</td>
<td>26.22</td>
<td></td>
</tr>
<tr>
<td>80%</td>
<td>2.19</td>
<td>12.20</td>
<td>17.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>85%</td>
<td>4.02</td>
<td>9.07</td>
<td>29.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparison of crop insurance payment likelihoods
Sangamon

This table indicates the frequency, or percentage of years that each crop insurance option would make an indemnity payment. An entry of 15%, for example, indicates that the crop insurance product would have a payment triggered in 15 out of 100 years. A higher percentage indicates that the product generates a payment to the producer more often than one with a lower percentage.

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>APH</th>
<th>RA-BP</th>
<th>RA-HP</th>
<th>CRC</th>
<th>GRP</th>
<th>GRIP-NoHR</th>
<th>GRIP-HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>55%</td>
<td>0.30</td>
<td></td>
<td></td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td>0.54</td>
<td></td>
<td></td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65%</td>
<td>1.22</td>
<td>3.66</td>
<td>5.04</td>
<td>4.34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70%</td>
<td>2.32</td>
<td>7.02</td>
<td>9.44</td>
<td>8.34</td>
<td>1.36</td>
<td>5.50</td>
<td>6.72</td>
</tr>
<tr>
<td>75%</td>
<td>4.44</td>
<td>11.48</td>
<td>15.24</td>
<td>13.98</td>
<td>2.90</td>
<td>9.80</td>
<td>12.20</td>
</tr>
<tr>
<td>80%</td>
<td>8.08</td>
<td>17.78</td>
<td>22.96</td>
<td>22.00</td>
<td>5.80</td>
<td>17.00</td>
<td>21.30</td>
</tr>
<tr>
<td>85%</td>
<td>13.60</td>
<td>25.12</td>
<td>33.04</td>
<td>31.88</td>
<td>10.98</td>
<td>25.58</td>
<td>33.22</td>
</tr>
<tr>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19.60</td>
<td>35.12</td>
<td>47.64</td>
</tr>
</tbody>
</table>
Comparison of crop insurance net costs - Sangamon

Over many years, payments from crop insurance will offset part or all of their premium costs. This table shows the net cost of insurance products found by combining the premium costs with information about frequency and amount of payments (previous tables). Negative entries indicate that the insurance costs more on average than it pays back. Positive entries indicate that the insurance actually pays back more over the long run than it costs. Note that in this case, higher coverage (lower subsidy rates) result in higher net costs for individual products and lower net costs (positive payments) for group products.
Comparison of revenue - Sangamon

<table>
<thead>
<tr>
<th>Coverage Election</th>
<th>APH</th>
<th>RA-BP</th>
<th>RA-HP</th>
<th>CRC</th>
<th>GRP</th>
<th>GRIP</th>
<th>hp (grip-hpo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>$422.88</td>
<td></td>
<td></td>
<td>$422.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55%</td>
<td>$422.62</td>
<td></td>
<td></td>
<td>$421.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td>$422.35</td>
<td></td>
<td></td>
<td>$420.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65%</td>
<td>$421.84</td>
<td>$422.19</td>
<td>$421.26</td>
<td>$420.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70%</td>
<td>$421.47</td>
<td>$421.57</td>
<td>$420.41</td>
<td>$420.06</td>
<td>$422.93</td>
<td>$425.08</td>
<td>$425.06</td>
</tr>
<tr>
<td>75%</td>
<td>$420.85</td>
<td>$420.62</td>
<td>$419.14</td>
<td>$419.82</td>
<td>$423.42</td>
<td>$427.33</td>
<td>$427.65</td>
</tr>
<tr>
<td>80%</td>
<td>$420.01</td>
<td>$418.93</td>
<td>$416.91</td>
<td>$419.38</td>
<td>$423.69</td>
<td>$428.98</td>
<td>$430.62</td>
</tr>
<tr>
<td>85%</td>
<td>$418.88</td>
<td>$415.56</td>
<td>$412.67</td>
<td>$418.05</td>
<td>$425.08</td>
<td>$431.93</td>
<td>$435.89</td>
</tr>
<tr>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$426.45</td>
<td>$435.28</td>
<td>$442.25</td>
</tr>
</tbody>
</table>

Average Gross Revenue/Acre without insurance $423.51

Average Gross Revenues are estimated assuming all the crop is sold at harvest. Gross Revenue equals crop sales plus any LDP payments, plus insurance proceeds, less insurance premium costs.
This table contains a measure that helps evaluate the risk reduction associated with each product. The entries in the table are the 5% values at risk which indicate the level of revenue with outcomes at or below in 5% of the years (e.g., a one in twenty risk). Higher VARs are preferred as they indicate more of the low revenues have been eliminated by the insurance product.
Probabilities of Revenue With Insurance

- No Ins.
- APH85
- RABP85
- RAHP85
- CRC85
- GRP90
- GRIP90
- GRIPHP90
**What if....? (Scenario Analysis)**

### 2006 *iFARM* Crop Insurance "What-If?" Analyzer: North Central Region Crops

<table>
<thead>
<tr>
<th>Describe insurance policy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
</tr>
<tr>
<td>Saline</td>
</tr>
<tr>
<td>Corn</td>
</tr>
<tr>
<td>100</td>
</tr>
</tbody>
</table>

**APH Yield**

167

(Actual Production History Yield) in bu./acre

Describe harvest prices and yields (can be changed on next page)

<table>
<thead>
<tr>
<th>Actual farm yield</th>
<th>Actual county yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>132</td>
<td>147</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Harvest futures price</th>
<th>Harvest basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.10</td>
<td>.35</td>
</tr>
</tbody>
</table>

The tool estimates insurance payments, premium, and gross revenues for alternative products. Two types of inputs are required. The first describe harvest prices and yields. The second describes yields and harvest prices. These can be changed.

Click any state above for a detailed image of its counties.

Last Updated: 01/27/2006
The *iFarm What-IF Analyzer* calculates estimated payments from 2006 crop insurance products. Payments are estimated based on the actual farm yield, actual county yield, and harvest price shown below. The basis (futures price minus cash price) is used to calculate gross revenue. These entries can be changed to show alternative estimated payments for 2006 insurance products.

![Table showing estimated insurance payments](image)

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>APH ($/acre)</th>
<th>RA-BP ($/acre)</th>
<th>RA-HP ($/acre)</th>
<th>CRC ($/acre)</th>
<th>GRP ($/acre)</th>
<th>GRIP-NoHR ($/acre)</th>
<th>GRIP-HR ($/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>75%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>80%</td>
<td>3</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>85%</td>
<td>20</td>
<td>0</td>
<td>31</td>
<td>31</td>
<td>8</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>90%</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>58</td>
<td></td>
</tr>
</tbody>
</table>
Summary Comments:

- Movement toward Group Products – some impact of recent payment patterns and prices.
- Impact of higher prices yet to be seen. Average of Feb Prices often differs from APH indemnity prices.
- Marketing decisions affect insurance choices.
- Choices often involve tradeoff between average return and protection against lowest possible outcomes.