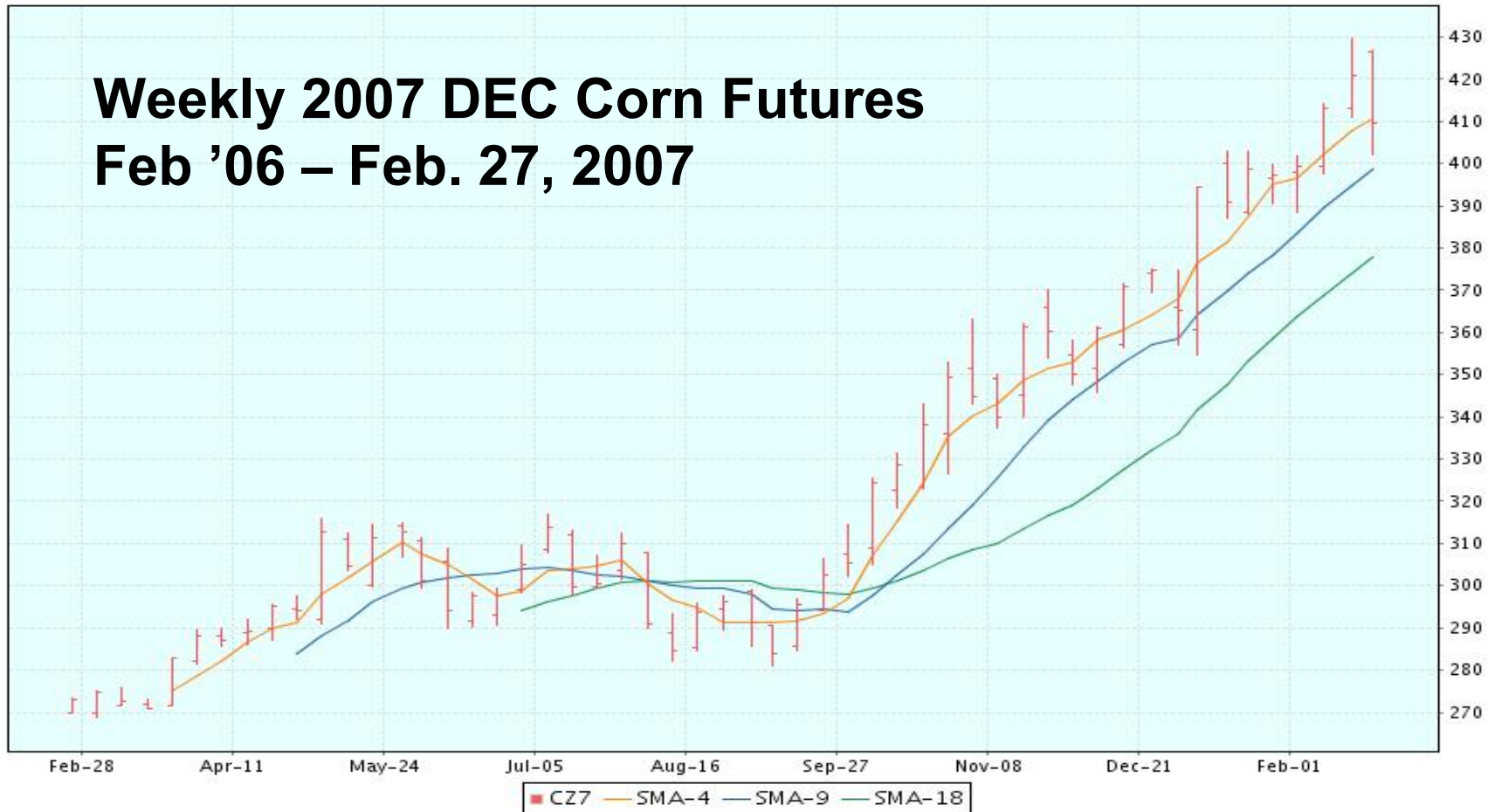

Cost of Production & Equitable Leasing Arrangements for Center Pivot Irrigated Corn

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K-State Research and Extension

High Grain Price Expectations for Harvest 2007



Rising Crop Production Costs

- Hyper-competitive Crop Input Markets
 - Seed ?
 - Fertilizer ?
 - Chemical ?
 - Crop Insurance
 - Machinery ?
 - Land ?



Examining Crop Profits & Leases

■ **Expected Profitability**

- Projected Net Returns in 2007 for Center Pivot Irrigated Corn in Central Nebraska

■ **Leasing Arrangements**

- Crop Share Leases:
 - Equitable % Shares for Operators & Landowners
 - Cash Rent Leases:
 - Breakeven returns to land & management for Operators
-

Center Pivot Irrigated Corn Budgets

Source: 2006 UNL Extension Crop Budgets

A. Conventional Till Continuous Corn

- Actual Yield = 175 bu/ac (Goal: 190 bu/ac)

B. No Till Continuous Corn

- Actual Yield = 180 bu/ac (Goal: 195 bu/ac)

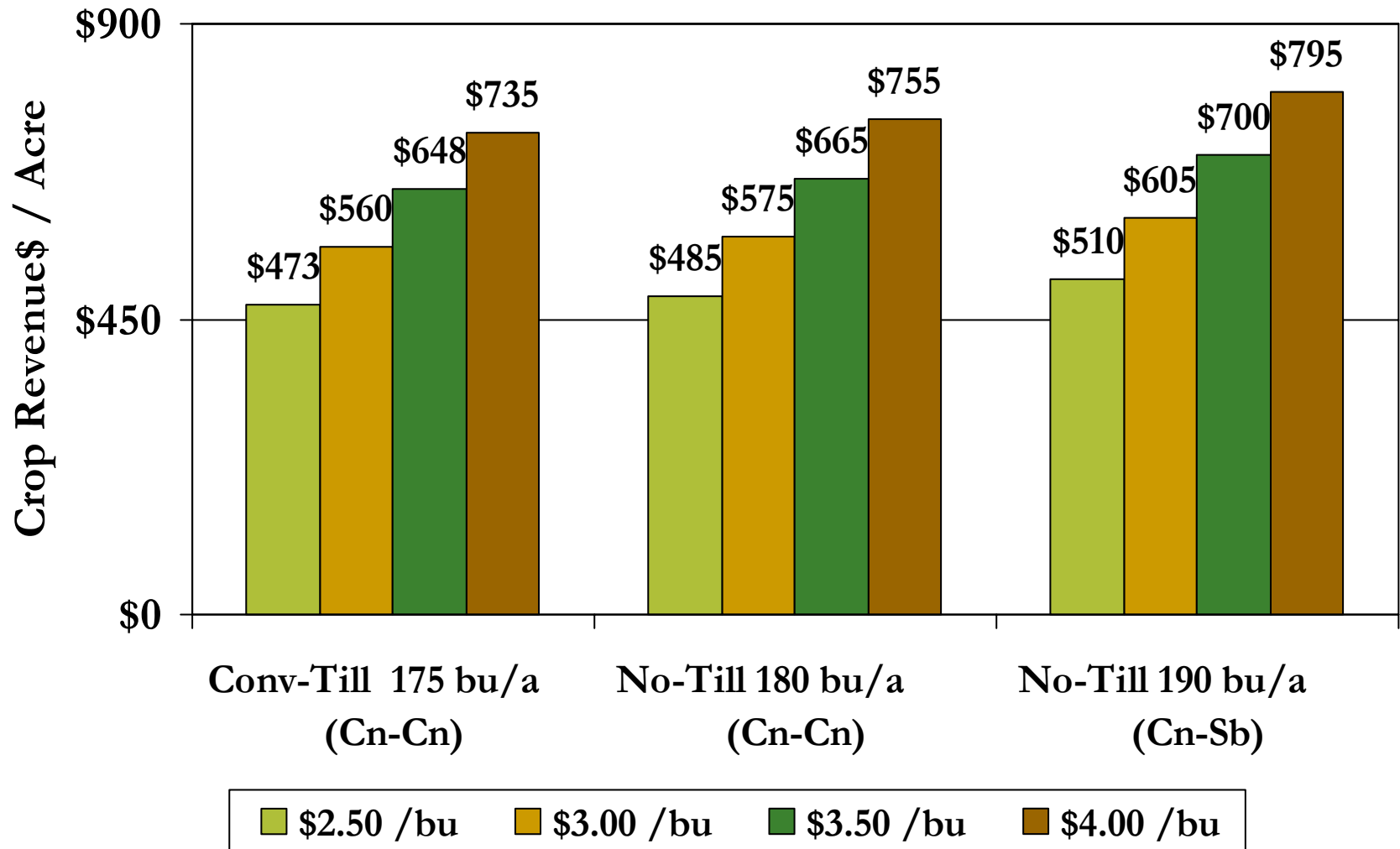
C. No Till Corn (Corn-Soybean Rotation)

- Actual Yield = 190 bu/ac (Goal: 205 bu/ac)
-

Irrigated Corn Income

Income / Acre	Conv-Till Corn (Cn-Cn)	No-Till Corn (Cn-Cn)	No-Till Corn (Cn-Soy)
A. <i>Actual Yield / ac.</i> <i>(Yield Goal / ac.)</i>	175 bu <i>(190 bu)</i>	180 bu <i>(195 bu)</i>	190 bu <i>(205 bu)</i>
B. \$Price	\$3.50 /bu	\$3.50 /bu	\$3.50 /bu
C. Gov't Payment	\$35. <u>00</u>	\$35. <u>00</u>	\$35. <u>00</u>
F. \$Returns / Acre	\$647. <u>50</u>	\$665. <u>00</u>	\$700. <u>00</u>

Corn Price Impact on Crop Revenue



Seed, Chemical & Fertilizer Costs

<u>Cost / Acre</u> (E_D: \$↑???)	Conv-Till Corn (Cn-Cn)	No-Till Corn (Cn-Cn)	No-Till Corn (Cn-Soy)
1. Seed (\$↑?)	\$58. <u>90</u>	\$60. <u>80</u>	\$63. <u>65</u>
2. Herbicide (\$↑?)	\$27. <u>03</u>	\$27. <u>59</u>	\$38. <u>48</u>
3. Insecticide (\$↑?)	\$4. <u>65</u>	\$4. <u>64</u>	\$1. <u>86</u>
4. Fertilizer (\$↑?)	\$51. <u>37</u>	\$53. <u>37</u>	\$45. <u>37</u>

Consulting, Insurance, Drying, Misc.

<u>Cost / Acre</u> (E_D: \$↑???)	Conv-Till Corn (Cn-Cn)	No-Till Corn (Cn-Cn)	No-Till Corn (Cn-Soy)
5. Consulting (\$↑?)	\$12. <u>50</u>	\$12. <u>50</u>	\$12. <u>50</u>
6. CRC Insurance	\$11. <u>66</u>	\$11. <u>63</u>	\$11. <u>52</u>
7. Drying (\$↑?)	\$45. <u>50</u>	\$46. <u>80</u>	\$24. <u>70</u>
8. Miscellaneous	\$20. <u>04</u>	\$31. <u>02</u>	\$26. <u>59</u>

Machinery, Labor^{NM*}, Op. Interest

<u>Cost / Acre</u> (E_D: \$↑???)	Conv-Till Corn (Cn-Cn)	No-Till Corn (Cn-Cn)	No-Till Corn (Cn-Soy)
9. Custom Hire / Machinery (\$↑?)	\$119. ³³	\$85. ⁸⁰	\$88. ²⁹
10. Non-Machinery Labor (\$10 per hour)	\$13. ⁴⁸	\$9. ⁷⁰	\$9. ⁹⁸
13. Interest on Operating Costs	\$17. ⁶⁸	\$15. ⁷⁴	\$15. ⁷⁹

Irrigation Cost (KSU) (Vs. \$80/a UNL est.)

<u>Cost / Acre</u> <i>(E_D: \$↑???)</i>	Conv-Till Corn (Cn-Cn)	No-Till Corn (Cn-Cn)	No-Till Corn (Cn-Soy)
11a. Labor (\$10 / hr)	\$5. <u>00</u>	\$5. <u>00</u>	\$5. <u>00</u>
11b. Fuel & Oil (\$↑?)	\$64. <u>61</u> (13" Applied)	\$44. <u>73</u> (9" Applied)	\$44. <u>73</u> (9" Applied)
11c. Repair-Maint.	\$4. <u>29</u>	\$2. <u>97</u>	\$2. <u>97</u>
11d. Depreciation (Equipment & Well)	\$53. <u>10</u>	\$53. <u>10</u>	\$53. <u>10</u>
11e. Interest (Equip/Well)	\$43. <u>52</u>	\$43. <u>52</u>	\$43. <u>52</u>

Irrigation System Costs

(2006 K-State Estimates)

- Well: \$27,700 - 25 yr life
- Pump & Gearhead \$22,000 - 25 yr life
- Power Unit \$10,000 - 7 yr life
- Meter & Connectors \$ 1,750 - 7 yr life

-
- Center Pivot System \$51,000
 - Underground pipe \$ 4,550
 - Electrical wiring \$ 3,770
 - **Total Center Pivot System** **\$59,320** (20 yrs)
-

Land Charge / Cash Rent

2006 Central NE Average

Cost / Acre	Conv-Till Corn (Cn-Cn)	No-Till Corn (Cn-Cn)	No-Till Corn (Cn-Soy)
12. Land Charge / Rent	\$139. <u>00</u>	\$139. <u>00</u>	\$139. <u>00</u>

■ Who owns the Center Pivot Irrigation System?

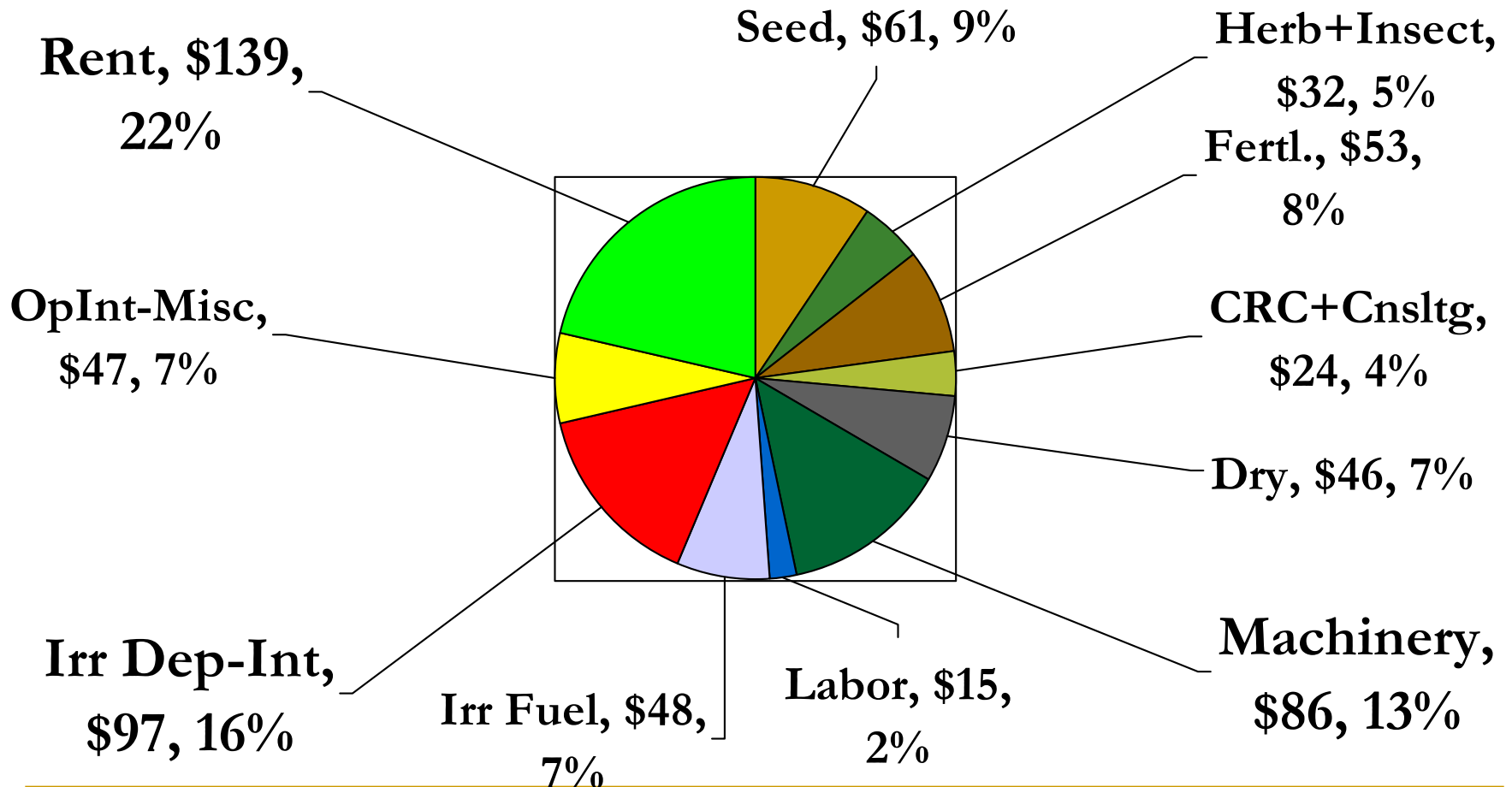
- Major impact on Equitable Share Rents & breakeven Cash Rents

Total Costs & Net Returns

\$ / Acre	Conv-Till Corn (Cn-Cn)	No-Till Corn (Cn-Cn)	No-Till Corn (Cn-Soy)
H. Total Costs	\$691.⁶⁵	\$647.⁹¹	\$627.⁰¹
J. Total Costs / Bu	\$3.⁹⁵ / bu	\$3.⁶⁰ / bu	\$3.³⁰ / bu
I. Return - Costs	(\$44.¹⁵)	\$17.⁰⁹	\$72.⁹⁹
K. % Return / Costs	(3.9%)	5.2%	14.5%

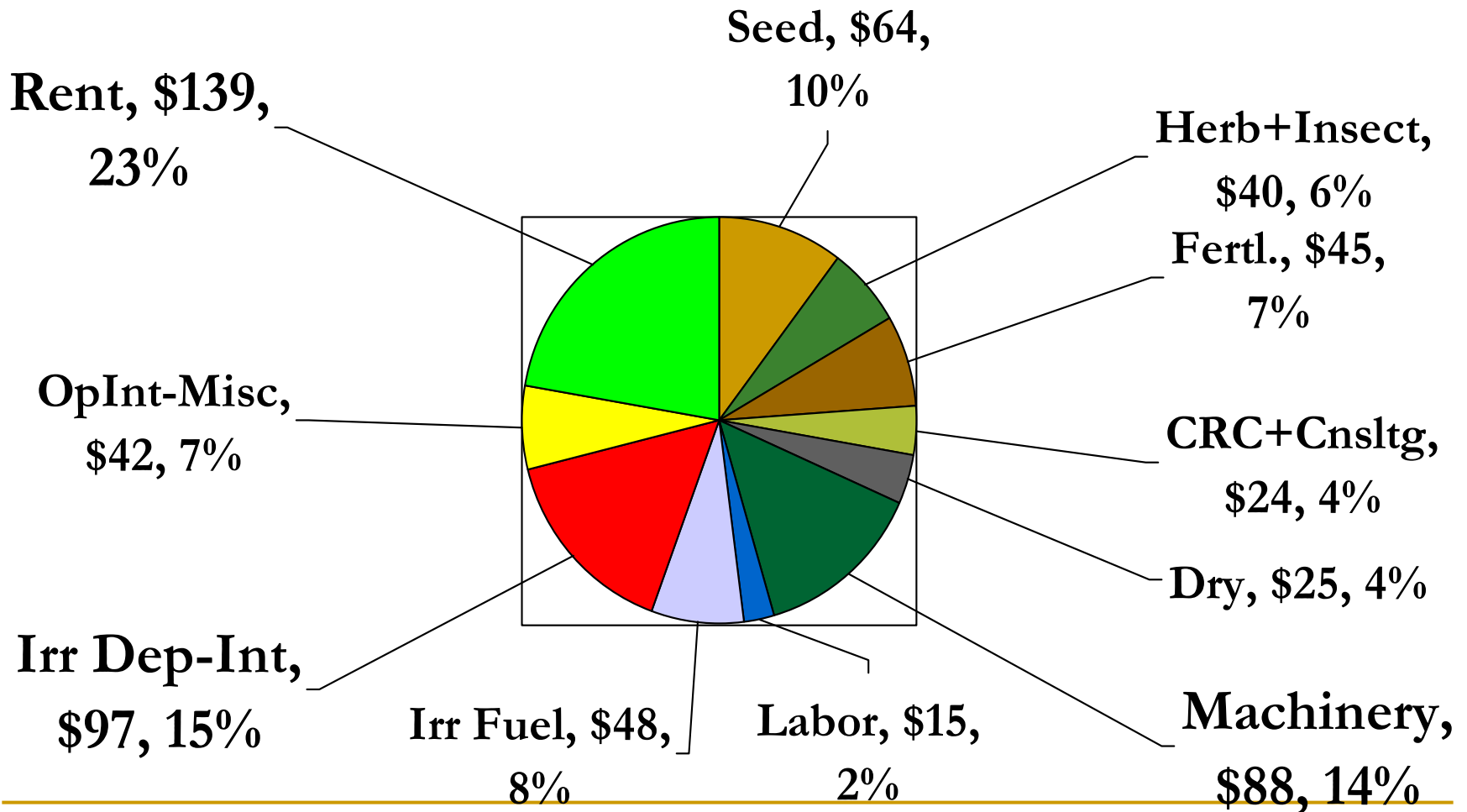
Cost Distribution

No-Till Continuous Corn, 180 bu/acre



Cost Distribution

No-Till Corn (Corn-Soyb Rotation): 190 bu/ac



Equitable Crop Share Scenarios

■ Scenario #1

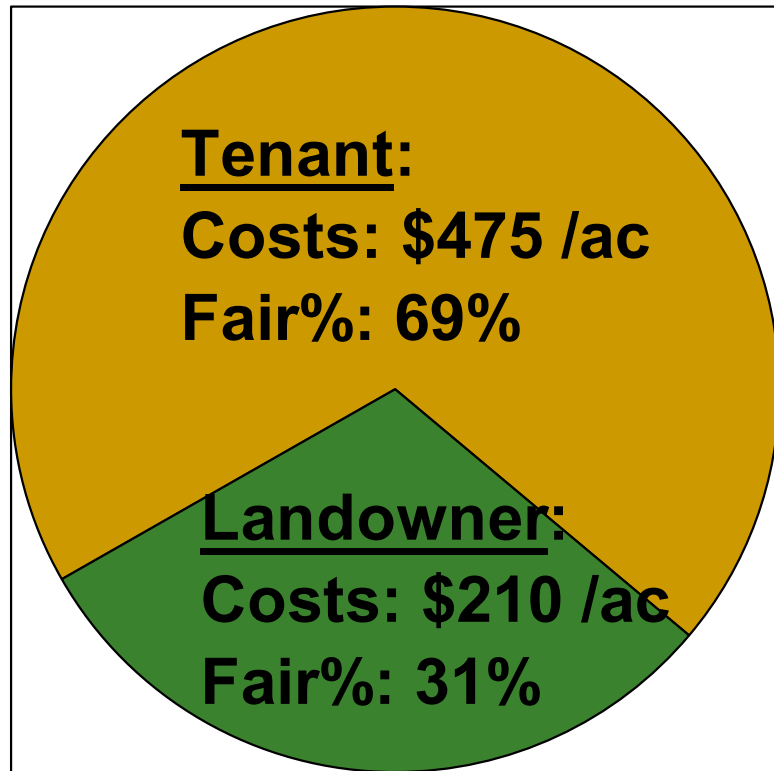
- Tenant: 100% Center Pivot & Power Unit
67% Herbicides, Drying, Crop Insurance
 - Landowner: 33% Herbicides, Drying, Insurance
100% Farmland
-

■ Scenario #2

- Tenant: 67% Herbicides, Drying, Crop Insurance
 - Landowner: 33% Herbicides, Drying, Insurance
100% Center Pivot & Power Unit
100% Farmland
-

Equitable Share: 175 bu – Scenario #1

Conventional Till Continuous Irrigated Corn



Operator Provides:

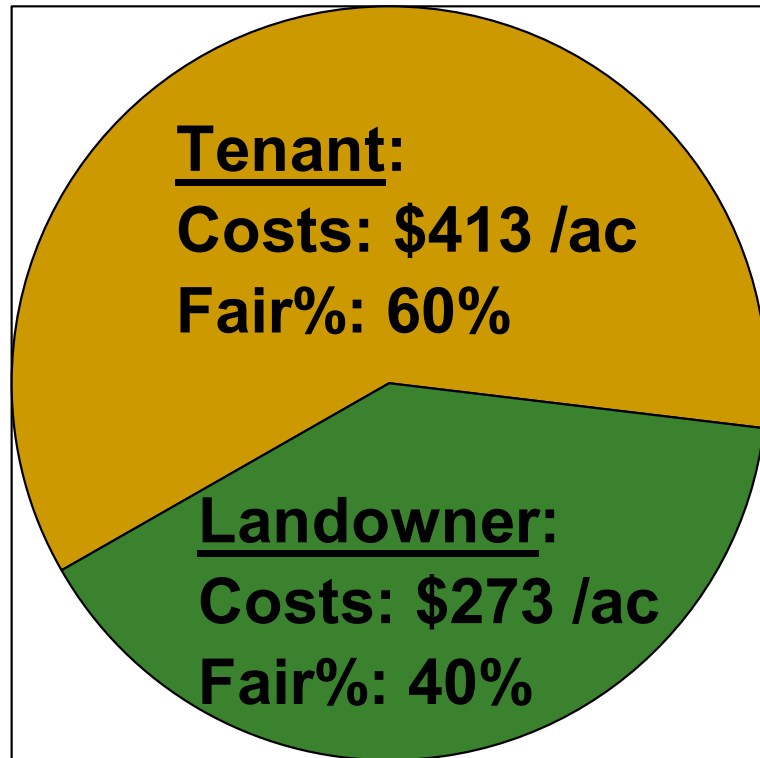
- 67% Fertilizer
- 67% Herb-Drying-CRC
- 100% Other Costs
- 100% Pivot+Power Unit

Landowner Provides:

- 33% Fertilizer
- 33% Herb-Drying-CRC
- Farmland (100%)

Equitable Share: 175 bu – Scenario #2

Conventional Till Continuous Irrigated Corn



Operator Provides:

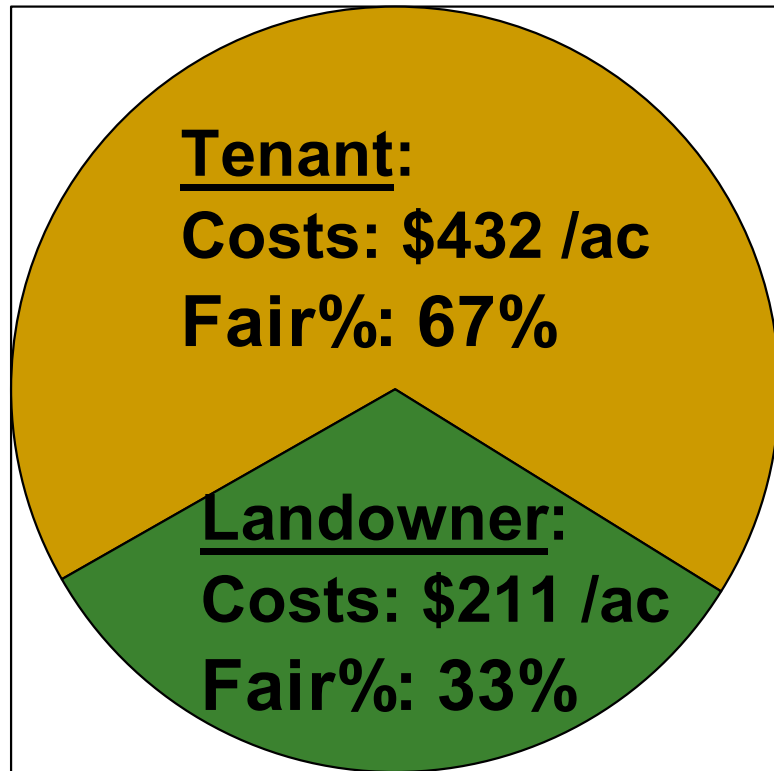
- 67% Fertilizer
- 67% Herb-Drying-CRC
- 100% Other Costs

Landowner Provides:

- 33% Fertilizer \$
- 33% Herb-Drying-CRC
- 100% Pivot, Power Unit
- Farmland (100%)

Equitable Share: 180 bu – Scenario #1

No-Till Continuous Irrigated Corn



Operator Provides:

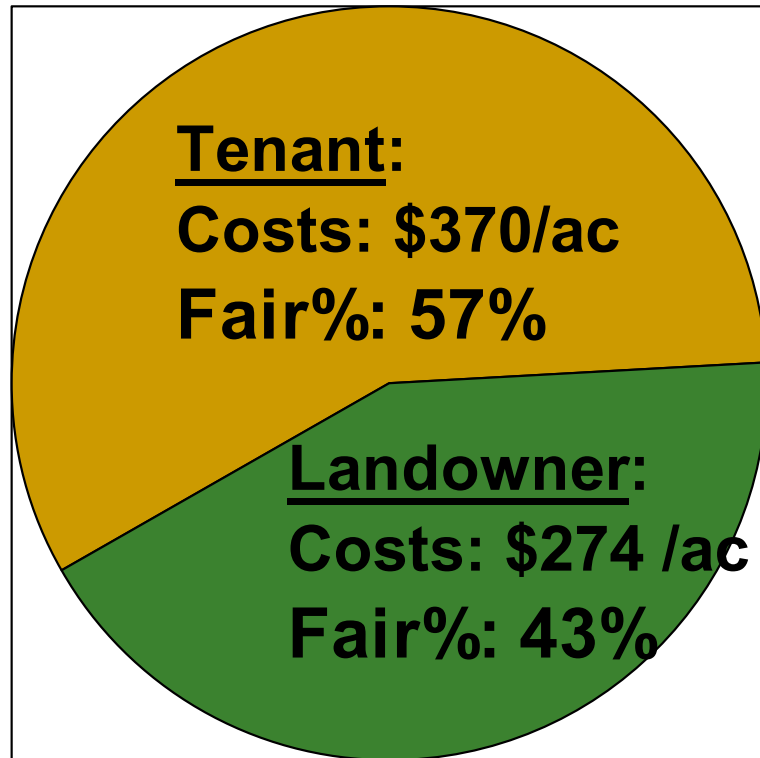
- 67% Fertilizer
- 67% Herb-Drying-CRC
- 100% Other Costs
- 100% Pivot+Power Unit

Landowner Provides:

- 33% Fertilizer \$
- 33% Herb-Drying-CRC
- Farmland (100%)

Equitable Share: 180 bu – Scenario #2

No-Till Continuous Irrigated Corn



Operator Provides:

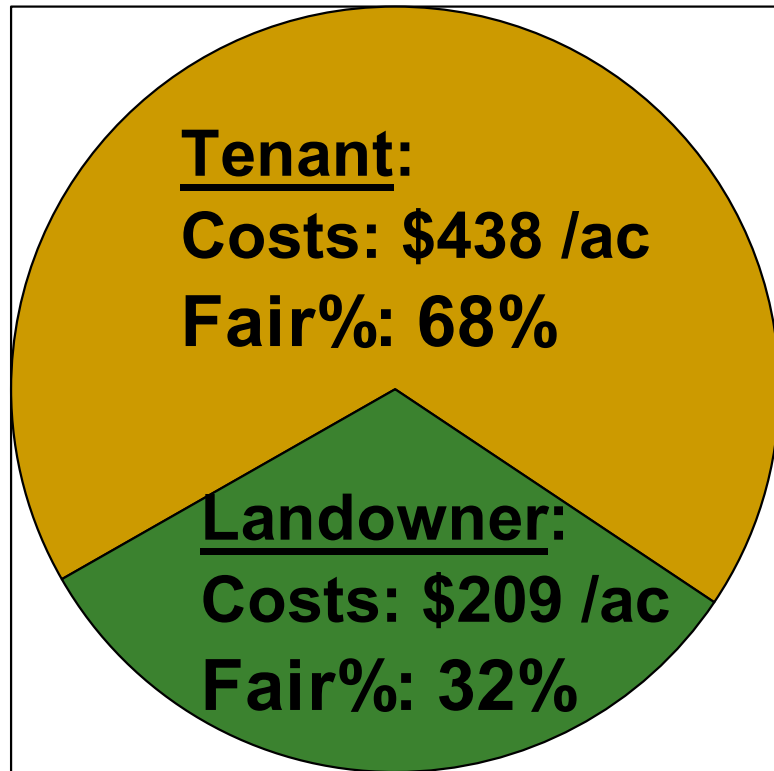
- 67% Fertilizer
- 67% Herb-Drying-CRC
- 100% Other Costs

Landowner Provides:

- 33% Fertilizer \$
- 33% Herb-Drying-CRC
- 100% Pivot+Power Unit
- Farmland (100%)

Equitable Share: 190 bu – Scenario #1

No-Till Irrigated Corn, Corn-Soybean Rotation



Operator Provides:

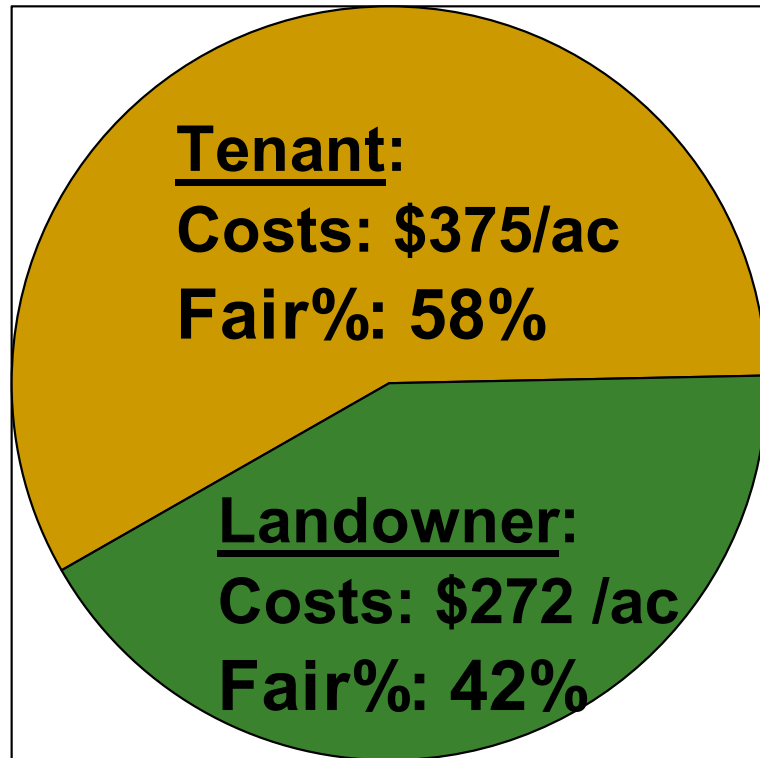
- 67% Fertilizer
- 67% Herb-Drying-CRC
- 100% Other Costs
- 100% Pivot+Power Unit

Landowner Provides:

- 33% Herb-Drying-CRC
- 33% Fertilizer \$
- Farmland (100%)

Equitable Share: 190 bu – Scenario #2

No-Till Irrigated Corn, Corn-Soybean Rotation



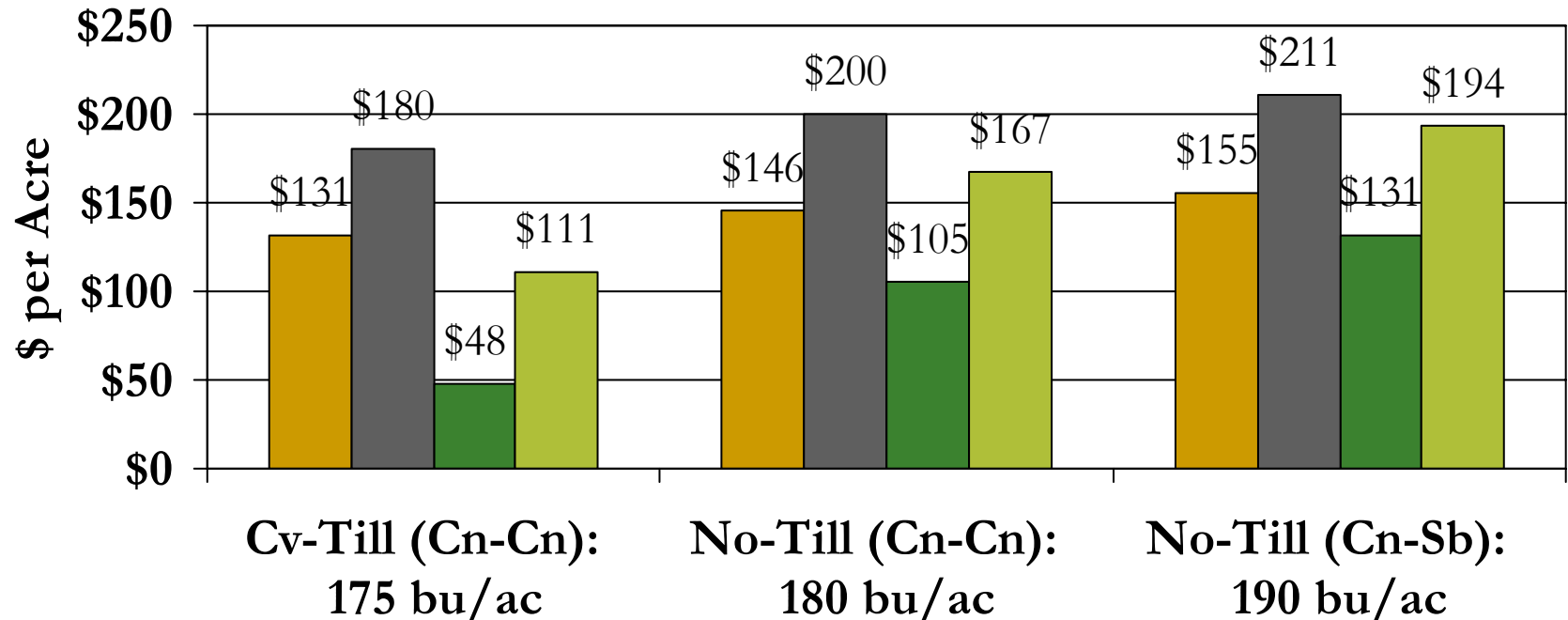
Operator Provides:

- 67% Fertilizer
- 67% Herb-Drying-CRC
- 100% Other Costs

Landowner Provides:

- 33% Fertilizer \$
- 33% Herb-Drying-CRC
- 100% Pivot+Power Unit
- Farmland (100%)

Cash Lease Equivalents & Breakeven Land Costs (\$3.00/bu Corn)



- LL Equiv't Share\$ (Tenant: Pivot+Power Unit)
- LL Equiv't Share\$ (LL: Pivot+Power Unit)
- Tenant's Breakeven Rent\$ (Tenant: Pivot+Power Unit)
- Tenant's Breakeven Rent\$ (LL: Pivot+Power Unit)

Conclusions

- Expectations of Higher Corn/Grain Prices for 2007 Crops
 - Uncertainty until crops are harvested
 - Landowner's financial returns in Equivalent Crop Share leases are similar to Tenant's Breakeven Cash Rental rates for irrigated cropland in 2007
-

Should Irrigated Crop Leases be adjusted due to high grain futures?

- **Should changes be made in 2007 crop leases NOW, eight (8) months prior to harvest of 2007 grain crops?**
 - Production / Yield Uncertainty:
 - *“What will growing conditions be for 2007 fall crops in Central Nebraska?”*
 - Price Uncertainty:
 - *“Will record high futures become high cash \$’s in 2007?”*
-

Adjustments to Crop Share Leases?

- Landowners are already in position to benefit from expected higher grain prices & revenues through their crop share lease
 - **Equitable % Shares?**
 - *May need to readjust the equitable % share if input prices rise dramatically*
 - 2007 Production & Price Rewards (& Risks) for Landowners & Tenants are dealt with by design through equitable Share Leases
-

Adjustments to Cash Rent Leases?

- Sizable Production, Price & Financial Risk still exists for the 2007 crop
 - Expected High Crop Revenues may or may not materialize from the 2007 Crop
 - Crop input costs for 2007 crops likely to rise in Spring months (tight supplies) to reduce actual profitability
 - Pre-Crop Committal to markedly higher 2007 Cash Rents by Tenants based on expected higher crop revenues is a high risk strategy
-

Cash Rent Adjustments? When?

- Managing Tenant's Financial Risk in 2007
Fall Crops
 - Communication & developing plans with Landowners ahead of harvest
 - Equitable sharing of high revenues should pre-harvest expectations turn into reality
 - ⇒ A type of “Fixed Base Rent with Flexible Provisions” should record high crop revenues occur in 2007 as projected
-

Comments or Questions?

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www.agmanager.info

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<http://www.oznet.ksu.edu/nwao/>
