Risk Management Considerations - Barley, Rye, Wheat, and Specialty Corn

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Web Page: https://cropeconomics.tennessee.edu
<table>
<thead>
<tr>
<th>Crop</th>
<th>NASS Acres Harvested for Grain 2022 (2017 Census)</th>
<th>RMA Insured Acres 2022</th>
<th>2022 FSA Crop Acreage (Grain)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>- (842)</td>
<td>1,320</td>
<td>2,358 (1,793)</td>
</tr>
<tr>
<td>Corn</td>
<td>835,000 (716,733)</td>
<td>706,643</td>
<td>799,454 (789,085)</td>
</tr>
<tr>
<td>Oats</td>
<td>- (581)</td>
<td>90</td>
<td>3,898 (1,289)</td>
</tr>
<tr>
<td>Rye</td>
<td>- (-)</td>
<td>-</td>
<td>3,666 (144)</td>
</tr>
<tr>
<td>Wheat</td>
<td>335,000 (312,973)</td>
<td>284,608</td>
<td>345,737</td>
</tr>
</tbody>
</table>

NASS Quick Stats: [https://quickstats.nass.usda.gov/](https://quickstats.nass.usda.gov/)
NASS Tennessee Ag Census: [https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1_Chapter_1_State_Level/Tennessee/](https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1_Chapter_1_State_Level/Tennessee/)
RMA Summary of Business: [https://www.rma.usda.gov/SummaryOfBusiness](https://www.rma.usda.gov/SummaryOfBusiness)
Corn Acres in Tennessee USDA FSA

• Crop Acreage Data Reported to FSA
  – Blue Corn: 0.5 acres
  – Ornamental: 1.1 acres
  – Red Corn: 63.6 acres
  – White: 22,653 acres
  – Yellow: 766,366 acres
Tennessee Organic Grain Production

• 2021 Certified Organic survey
  – Certified Organic Corn in Tennessee
    • 1,920 acres;
    • 174,906 bu;
    • 91 bu/acre;
    • $9.40/bu.
  – Certified Organic Wheat in Tennessee
    • 400 acres;
    • 21,000 bu;
    • 52.5 bu/acre;
    • $9.12/bu.

• AMS National Organic Grain and Feedstuffs Report
Risk Management

- Contracting
  - Examples
- Crop insurance
  - What are your options?
- Profitability analysis
  - Comparing enterprise alternatives
- Counterparty risk & alternative markets
  - Access to markets and discounts
Contracting

- Obtain proper legal advice
- Read and understand clauses in the contract
- Make sure you can comply to with the contract
- Be aware of counterparty risk
As a lawyer woke up in the hospital after surgery he asked, “Why are all the blinds drawn in here?” The nurse answered, “There’s a fire across the street and we didn’t want you to think the operation had been a failure.”
Malt Barley Purchase

• The producer grants the purchaser first right to purchase a minimum of 60 bu/acre of any or all of the barley produced on the contracted acreage provided the barley is selected by the purchaser and that it meets or exceeds the quality parameters outlined.

Q: How can a pregnant woman tell that she’s carrying a future lawyer?

A: She has an uncontrollable craving for bologna.
Sample Delivery

• Once the producer has completed harvesting the crop, the producer will provide production estimates and a representative 500-gram sample of the barley from each storage bin used by the producer within 10 days of completing harvest and a recheck upon request. The purchaser will advise the producer of suitability of submitted samples for malting within 10 business days of sample submission.

• USDA – Practical Procedures For Sampling Grain At Farm Sites And Remote Locations

Q: What’s the difference between a vacuum cleaner and a lawyer riding a motorcycle?
A: The vacuum cleaner has the dirt bag on the inside.
### Quality Specification (Example: CMC)

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>10%</td>
<td>12.5%</td>
<td>95% Green Kernels</td>
<td>1.0%</td>
</tr>
<tr>
<td>Germ (4ml/3-day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moisture</td>
<td>Max 13.5%</td>
<td></td>
<td>81% Sprout</td>
<td></td>
</tr>
<tr>
<td>Germ (8ml/3-day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plump (&gt;6/64ths)</td>
<td>85%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bright and Uniform</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DON (vomitoxin)</td>
<td></td>
<td></td>
<td></td>
<td>0.5 PPM</td>
</tr>
<tr>
<td>Thin Kernels</td>
<td>3.0%</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign Material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chitted</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peeled &amp; Broken</td>
<td>5.0%</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Cereal Grains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Insect</td>
<td>Nil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ergot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excreta</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stones</td>
<td>Nil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varietal purity</td>
<td>97%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild Oats</td>
<td></td>
<td></td>
<td></td>
<td>1.0%</td>
</tr>
</tbody>
</table>

**Q:** Why did God invent lawyers?

**A:** So that real estate agents would have someone to look down on.
Other Contract Provisions

- Storage and delivery interval.
- DON/Fusarium Head Blight other production practice controls.
- Notification of crop failure.
- Transfer of contract.

Q: What's the difference between an accountant and a lawyer?

A: Accountants know they're boring.
Contracting Summary

• Contracting can be a valuable tool to share risk between the producer and the purchaser.

• Not all contracts are equal, quality matters.

• Both parties should obtain independent legal advice.

Q: What do you call a lawyer with an IQ of 100?
A: Your Honor.
Q: What do you call a lawyer with an IQ of 50
A: Senator.
Crop Insurance

• Discuss available crop insurance alternatives with your crop insurance agent.
  – Insurable practices in your county
  – Data and information requirements
  – Coverage versus expected gross revenue
• Multiperil Crop Insurance (MPCI)
• Whole Farm Revenue Protection (WFRP)
  – https://www.rma.usda.gov/Fact-Sheets/National-Fact-Sheets/Whole-Farm-Revenue-Protection
• Noninsured Disaster Assistance (NAP)
Profitability Analysis

• Operation specific
• To compare alternative enterprises, determine:
  – Expected yield
  – Projected harvest or post harvest prices
  – Cost of production
  – Sensitivity analysis
Projected Yields

Average Tennessee Corn Yield, USDA NASS, 1980-2022

- Projected yield by crop
- Yield variability
- Yield trend
Harvest or Post Harvest Price

• Contracted price

• Local cash price at terminal market(s)

• Pricing alternatives

• Returns to storage

Tennessee Corn Average Price Improvement from September by Month, 2013/14 to 2020/21 Marketing Years
Develop cost of production estimates for the crops being considered.

Start with a template and modify to meet your specific needs.

Note uncertainty and variability in estimates.

Changes in capital requirements or specialized equipment.

Track actual costs compared to budgeted.

UTIA MANAGE Program: https://arec.tennessee.edu/extension/manage/
# Profitability Analysis

## #2 Yellow Corn

<table>
<thead>
<tr>
<th>Price ($/bu)</th>
<th>$5.75</th>
<th>$6.00</th>
<th>$6.25</th>
<th>$6.50</th>
<th>$6.75</th>
<th>$7.00</th>
<th>$7.25</th>
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<tbody>
<tr>
<td>Yield (bu/acre)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>135</td>
<td>-174</td>
<td>-140</td>
<td>-106</td>
<td>-73</td>
<td>-39</td>
<td>-5</td>
<td>29</td>
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<tr>
<td>145</td>
<td>-116</td>
<td>-80</td>
<td>-44</td>
<td>-8</td>
<td>29</td>
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<td>101</td>
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<tr>
<td>155</td>
<td>-59</td>
<td>-20</td>
<td>19</td>
<td>58</td>
<td>96</td>
<td>135</td>
<td>174</td>
</tr>
<tr>
<td>165</td>
<td>-1</td>
<td>40</td>
<td>81</td>
<td>123</td>
<td>164</td>
<td>205</td>
<td>246</td>
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<tr>
<td>175</td>
<td>56</td>
<td>100</td>
<td>144</td>
<td>188</td>
<td>231</td>
<td>275</td>
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<tr>
<td>185</td>
<td>114</td>
<td>160</td>
<td>206</td>
<td>253</td>
<td>299</td>
<td>345</td>
<td>391</td>
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<tr>
<td>195</td>
<td>171</td>
<td>220</td>
<td>269</td>
<td>318</td>
<td>366</td>
<td>415</td>
<td>464</td>
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<tr>
<td>205</td>
<td>229</td>
<td>280</td>
<td>331</td>
<td>383</td>
<td>434</td>
<td>485</td>
<td>536</td>
</tr>
<tr>
<td>215</td>
<td>286</td>
<td>340</td>
<td>394</td>
<td>448</td>
<td>501</td>
<td>555</td>
<td>609</td>
</tr>
</tbody>
</table>

**Assumptions:**
- Cost of Production: $950/acre
- Expected Harvest Price: $6.50/bu
- Projected Yield: 175 bu/acre
## Profitability Analysis

### Net Returns for Select Price and Yield Combinations ($/acre)

<table>
<thead>
<tr>
<th>Yield (bu/acre)</th>
<th>Organic Price ($/bu)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$11.75</td>
</tr>
<tr>
<td>55</td>
<td>-394</td>
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<tr>
<td>65</td>
<td>-276</td>
</tr>
<tr>
<td>75</td>
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<td>85</td>
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<td>95</td>
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<td>105</td>
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<td>115</td>
<td>311</td>
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<tr>
<td>125</td>
<td>429</td>
</tr>
<tr>
<td>135</td>
<td>546</td>
</tr>
</tbody>
</table>

### Assumptions:
- **Cost of Production:** $1,040/acre
- **Expected Harvest Price:** $12.50/bu
- **Projected Yield:** 95 bu/acre

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*Image 752x12 to 955x55*

*Image -3x-3 to 963x64*

*Image 404x12 to 556x42*

*Image 287x413 to 675x501*
Under what price, yield, and cost of production scenarios is option 1 superior to 2.
What are the differences in risk or uncertainty of outcomes.
Counterparty Risk & Alternative Markets

• For the crop produced:
  – How many buyers are available?
  – Distance to market (s).

• Secondary markets if quality is not obtained:
  – Animal Feed (# of buyers distance)
  – Price discounts
  – Incorporate secondary markets into sensitivity analysis.
USDA Agricultural Marketing Service Federal Grain Inspection Service U.S. Standards

- Corn: https://www.ams.usda.gov/sites/default/files/media/CornStandards.pdf
January 10, 2023
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THANK YOU