Hemp Economics

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Extension Risk Management Specialist
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• *Change is guaranteed* and data is almost nonexistent

• Special Considerations

• Supply

• Production Models

Outline
Special Considerations
• Testing and licensing $500+ from current listing in TDA’s rule submitted to USDA; there are costs listed that are not yet specified
  • $100 licensing and renewal annually
  • Participation fee $100 per unit
  • Sampling and collection fee $300
  • Fee for seed certification $??
  • Fee for actual testing $??

• Loss from ‘hot’ crop

• Labor

• Security

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Potential Extra Costs
• Available for 2020

• Some states will have yield insurance similar to other covered commodities such as cotton

• However, Texas will only have Whole-Farm Revenue Protection (WFRP) available
  • Noninsured Crop Disaster Assistance Program (NAP) will also be available to hemp producers

Crop Insurance
• There is an insurance liability cap of $8.5 million

• Eligibility criteria include:
  • Growers compliance with applicable state, tribal, federal regulations
  • Have contract for purchase for the insured industrial hemp
  • Hemp that tests above allowable level of THC is NOT an insurable loss

• FSA will offer direct and guaranteed loans to hemp growers
  • Must have a license, a contract, and crop insurance
Supply
FSA Reported Hemp Planted Acres

Source: USDA FSA
<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Tennessee</td>
<td>200</td>
<td>3,338</td>
<td>37,416</td>
<td>18608%</td>
</tr>
<tr>
<td>4</td>
<td>Montana</td>
<td>542</td>
<td>22,000</td>
<td>40,000</td>
<td>7280%</td>
</tr>
<tr>
<td>3</td>
<td>Oregon</td>
<td>3,469</td>
<td>7,808</td>
<td>51,313</td>
<td>1379%</td>
</tr>
<tr>
<td>2</td>
<td>Kentucky</td>
<td>3,100</td>
<td>6,700</td>
<td>58,000</td>
<td>1771%</td>
</tr>
<tr>
<td>1</td>
<td>Colorado</td>
<td>9,700</td>
<td>21,578</td>
<td>80,000</td>
<td>725%</td>
</tr>
<tr>
<td></td>
<td>Sum</td>
<td>17,011</td>
<td>61,424</td>
<td>266,729</td>
<td>1468%</td>
</tr>
<tr>
<td></td>
<td>Total U.S.</td>
<td>25,713</td>
<td>78,176</td>
<td>310,721</td>
<td>1108%</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td></td>
<td>77,929</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

State-Level Licensed Hemp Acreage, ‘17-‘19

2019 Data are estimates, as of July 2, 2019
Source 1: Kirk Goble, ALC on Cannabis and Industrial Hemp
Source 2:* VoteHemp.com – U.S. Hemp Crop Report
Fiber Production
• Limited processing facility, but growing

Dallas-based Panda Biotech breaks into hemp business, plans a giant industrial facility

• Being close to a processor is critical to profitability

• Might have the most long-term potential of all hemp end-markets

Fiber
• Revenue per acre: $720
  • 9,000 lbs. at $0.08/lb.

• Variable Costs per acre: $819.45

• Net loss of $99.45 per acre before fixed costs
CBD Production
• Revenue per acre: $22,680
  • 9% CBD, 1,200 dry matter per acre at $2.10 per percent CBD

• Variable Costs per acre: $16,834.12

• Net $5,845.88 per acre before fixed costs

• If price, yield, or %CBD falls 25%
  • Revenue per acre falls to $17,010/acre
  • Net per acre before fixed cost is now $175/acre
  • Price has declined by approximately 67% this year, loss of $9,349/acre
Midpoint Biomass Spot Price (per % CBD Content/lb)

Source: PanXchange
• Revenue per acre: $12,312
  • 9% CBD, 1,200 dry matter per acre at $1.14 per percent CBD

• Variable Costs per acre: $16,834.12

• Net loss $4,522.12 per acre before fixed costs

Current CBD Price
### Revenues

<table>
<thead>
<tr>
<th>Product</th>
<th>Low Yield/Acre (Lbs.)</th>
<th>High Yield/Acre (Lbs.)</th>
<th>Low Price/Lb.</th>
<th>High Price/Lb.</th>
<th>Low Gross Revenue</th>
<th>Average Gross Revenue</th>
<th>High Gross Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flowers</td>
<td>1,000</td>
<td>1,200</td>
<td>$ 3.50</td>
<td>$ 30.00</td>
<td>$ 3,500</td>
<td>$ 18,425</td>
<td>$ 36,000</td>
</tr>
<tr>
<td>Fiber</td>
<td>2,000</td>
<td>11,000</td>
<td>$ 0.07</td>
<td>$ 0.67</td>
<td>$ 140</td>
<td>$ 2,405</td>
<td>$ 7,370</td>
</tr>
<tr>
<td>Grain</td>
<td>800</td>
<td>1,600</td>
<td>$ 0.65</td>
<td>$ 1.70</td>
<td>$ 520</td>
<td>$ 1,410</td>
<td>$ 2,720</td>
</tr>
</tbody>
</table>

### Variable Costs

<table>
<thead>
<tr>
<th>Product</th>
<th>Flowers</th>
<th>Fiber</th>
<th>Grain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ 28,638</td>
<td>$ 1,077</td>
<td>$ 898</td>
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### Sources:
Vote Hemp; University of Kentucky, Industrial Hemp Budget 2019; Kentucky Department of Agriculture; Congressional Research Service, Defining Hemp: A Fact Sheet.

### Costs & Returns Interim Rule

<table>
<thead>
<tr>
<th>Product</th>
<th>Low Net Revenue</th>
<th>Average Net Revenue</th>
<th>High Net Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flowers</td>
<td>$(25,138)</td>
<td>$(10,213)</td>
<td>$ 7,362</td>
</tr>
<tr>
<td>Fiber</td>
<td>$(937)</td>
<td>$ 1,328</td>
<td>$ 6,293</td>
</tr>
<tr>
<td>Grain</td>
<td>$(378)</td>
<td>$ 512</td>
<td>$ 1,822</td>
</tr>
</tbody>
</table>
Final Thoughts
Areas of Economic Risk

- Production
  - Poor seed quality
  - Wind, hail, weeds, pests, etc.
- Harvesting approach
- Contract Risk
- FDA/Regulation
- Available Processing
- Overproduction
- Recommend having a lawyer review production contract

- VET EVERY STEP OF YOUR PRODUCTION CHAIN

- Don’t invest more than you’re willing to lose

- CBD price has declined by 2/3 in the last year

- No approved pesticide or insecticide
• George Knapek, Agriculture and Food Policy Center
  979-845-5913

• Justin Benavidez, High Plains Ag Week 11/1/2019
  https://agrilife.org/amarilloagecon/2019/11/01/high-plains-ag-week-11-1-19/

• Tiffany Dowell Lashmet, Justin Benavidez Texas Ag Law Blog, Video Summary of USDA Interim Final Hemp Rule
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Thanks!