WISCONSIN PERSPECTIVE
ON HEMP

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Wisconsin Agricultural Outlook Forum
January 29, 2019 Madison WI
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Wisconsin is Behind, Way Behind

- At least 14 states have more years of experience with hemp
- 10 states had more permitted acres of hemp in 2019

Maps courtesy of Dawn Thilmany, Colorado State University and Tyler Mark, University of Kentucky
Wisconsin Hemp Survey

SOURCE OF START-UP CAPITAL

- Personal funds: 83%
- Investors: 10%
- Loans: 11%

HAVE YOU FOUND A BUYER?

- Yes: 31%
- No: 42%
- Maybe: 27%
Wisconsin Hemp Survey: Barriers

• Lack of Grower Network
  • WI Hemp Farmers and Manufacturers
  • Wisconsin Hemp Alliance
  • [https://fyi.extension.wisc.edu/hemp/buyer-only-listing/](https://fyi.extension.wisc.edu/hemp/buyer-only-listing/)

• Seed Availability
  • High cost a continuing issue
  • Multiple stories of fraud

• Weather
  • Welcome to Agriculture!
  • Crop Insurance will help

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• Labor Availability
  • Issue for all WI businesses, including manufactures and agriculture
  • Low unemployment rate in the state

• Lack of Equipment
  • Lots of hand labor; many made/adapted own equipment to save labor

• Difficulty obtaining formal financing
  • Mostly self-financed, less formal analysis
  • Should diminish, but expect formality: analysis and insurance requirements
CBD and Hemp prices will continue to fall

- Never underestimate the capacity of agriculture to oversupply any market
- Global competition
- Be realistic on prices for business planning
- Maintain good relationships with reputable buyers

### CBD to Sell

<table>
<thead>
<tr>
<th>Product</th>
<th>Aug</th>
<th>Dec</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBD Biomass $/lb*</td>
<td>$3.80</td>
<td>$1.73</td>
<td>−54%</td>
</tr>
<tr>
<td>CBD Flower $/lb</td>
<td>$414</td>
<td>$221</td>
<td>−47%</td>
</tr>
</tbody>
</table>

### Seed to Plant

<table>
<thead>
<tr>
<th>Product</th>
<th>Aug</th>
<th>Dec</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clones, each</td>
<td>$4.67</td>
<td>$3.53</td>
<td>−24%</td>
</tr>
<tr>
<td>Seed, non-feminized</td>
<td>$2,460</td>
<td>$1,967</td>
<td>−20%</td>
</tr>
</tbody>
</table>

Source: [https://www.hempbenchmarks.com/](https://www.hempbenchmarks.com/)
*Less than 25,000 pounds
Wisconsin Strengths: A Diverse Agriculture

- Wisconsin farmers have experience planting a lot of different crops
- Lots of support systems, experience, infrastructure
- Commercial scale and small scale farming and on-farm value added
- Wisconsin has a history of growing hemp

### Commodity

<table>
<thead>
<tr>
<th>Commodity</th>
<th>US Rank</th>
<th>$ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato</td>
<td>3rd</td>
<td>$306</td>
</tr>
<tr>
<td>Processed Vegetables</td>
<td>2nd</td>
<td>$176</td>
</tr>
<tr>
<td>Cranberry</td>
<td>1st</td>
<td>$143</td>
</tr>
<tr>
<td>Organic Milk</td>
<td>2nd</td>
<td>$125</td>
</tr>
<tr>
<td>Organic Vegetables</td>
<td>8th</td>
<td>$24</td>
</tr>
<tr>
<td>Ginseng</td>
<td>1st</td>
<td>$50-$90</td>
</tr>
</tbody>
</table>

- How large will hemp be in Wisconsin?
  - $7/lb x 1,500 lbs/ac x 10,000 ac = $105 million
Wisconsin Strengths: Food Processing

- Dairy, meat, vegetables, fermented products
  - 1st in cheese production, uses 90% of our milk
  - 2nd largest processing vegetable industry
- Food processing and supporting manufacturing industries have high “location quotients” in Wisconsin
  - We are good at these things, better than other major hemp states
- Support Industries
  - Machinery and equipment manufacturing
  - Packaging: paper and plastic
Future of Hemp in Wisconsin

- Hemp will be a part of Wisconsin agriculture, but a lot of work to do
- Hemp Farming
  - Wisconsin can do both commercial scale and small scale production for niche products, as well as organic
  - Agronomic and equipment problems to solve
- Need to solve the THC problem
  - Short-term: Push for higher concentrations accepted in industrial production and longer harvest windows post testing
  - Longer-term: Crop breeding to develop non-THC varieties and/or certified hemp varieties
Future of Hemp in Wisconsin

• Processing and Marketing is where the economic impact will be
  • Deller: $22 billion in farm production becomes $105 million economic impact
• Need entrepreneurs to develop and market new hemp products
  • Food and Beverages
  • Supplements and Additives
  • Fiber
  • Livestock Uses
Future of Hemp in Wisconsin: Food & Beverages

• Wisconsin has a comparative advantage in food & beverages
• Focus will be on food products using hemp seed for a while
  • FDA has approved hulled hemp seed, hemp seed protein powder, and hemp seed oil for food use (GRAS)
  • CBD is not FDA approved for food use
• Expect small companies to develop successful products in local and regional markets and then big food companies to buy them
  • Organic likely part of the system
• Wisconsin has done this in dairy/cheese, meat, vegetables and fermented products
Future of Hemp in Wisconsin: Supplements & Additives

• Major focus nationally on CBD in health and beauty products
  • Where the money is (was?) for farmers
• Need CBD product consistency and quality standards
• Need medical research on CBD (and THC)
  • Products can only make general wellness claims
  • CBD in food and drugs is likely a long way off for business
• When will CBD market saturate? Has it already?
• Are there other extracts besides CBD?
Future of Hemp in Wisconsin: Fiber and Livestock Uses

- Fiber not currently a comparative advantage for Wisconsin
  - Fabric mills are 10+ hours away in TN, CO, PA, NY
  - Paper: Wisconsin already has a paper industry
  - Insulation, Hempcrete, Industrial uses: Need to develop and test products
  - Lots of work to do to develop hemp fiber products
- Livestock Uses: Still waiting for FDA approval for feed use
  - Can hemp seed compete with corn and/or soybeans?
    - University of Kentucky Study: Hemp silage similar to alfalfa
  - Does the milk or meat taste different (in a good way) for animals with a lot of hemp silage or hemp seed in their diet?
  - Hemp as bedding: Maybe as a secondary product
Summary

- Wisconsin is behind many states, but can catch up and lead
- Need entrepreneurs to develop new products and markets
- Wisconsin has comparative advantages in specialty crops, food processing and manufacturing to help establish a hemp industry
  - WI farmers will add hemp to their list of specialty crops
  - WI companies can make food and beverages using hemp seed
  - Research needed on hemp seed and/or silage as livestock feed
  - WI faces more competition in CBD supplements and additives for health and beauty aids, but still has manufacturing advantages
Thanks for your Attention

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