

WISCONSIN PERSPECTIVE ON HEMP

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Wisconsin Agricultural Outlook Forum

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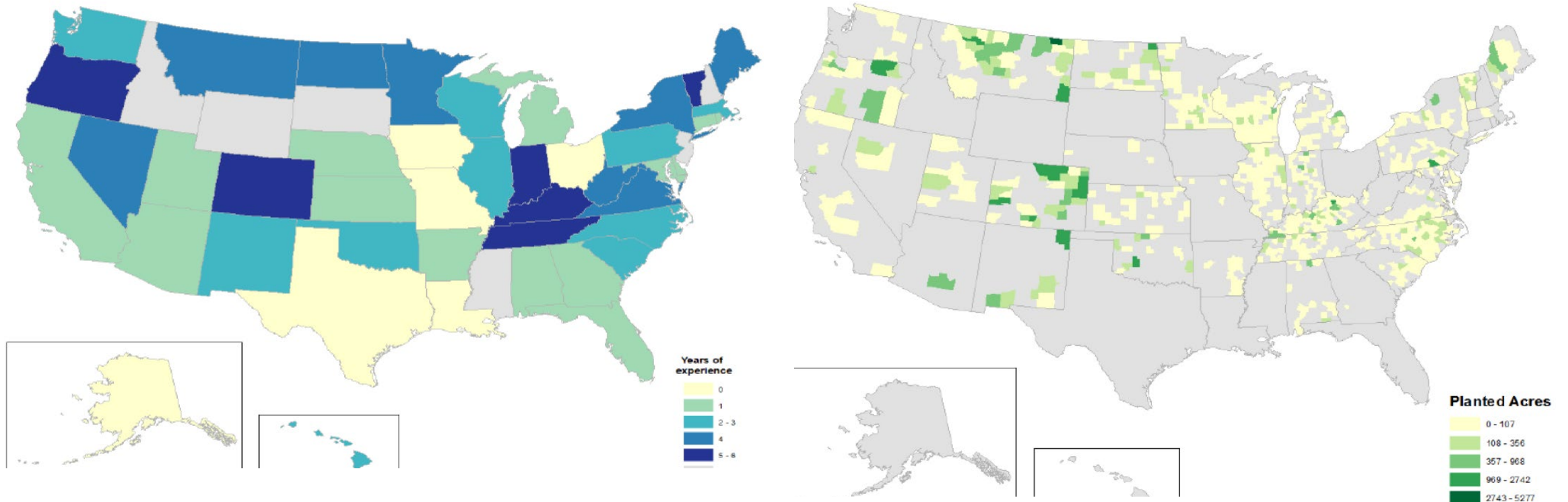
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Wisconsin is Behind, Way Behind

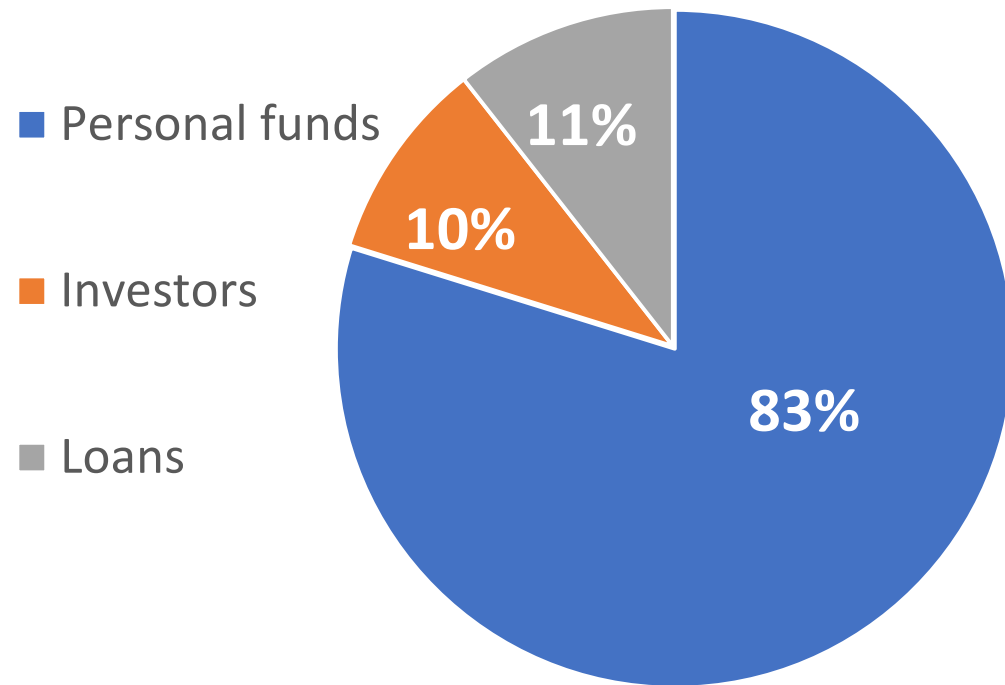
- At least 14 states have more years of experience with hemp
- 10 states had more permitted acres of hemp in 2019



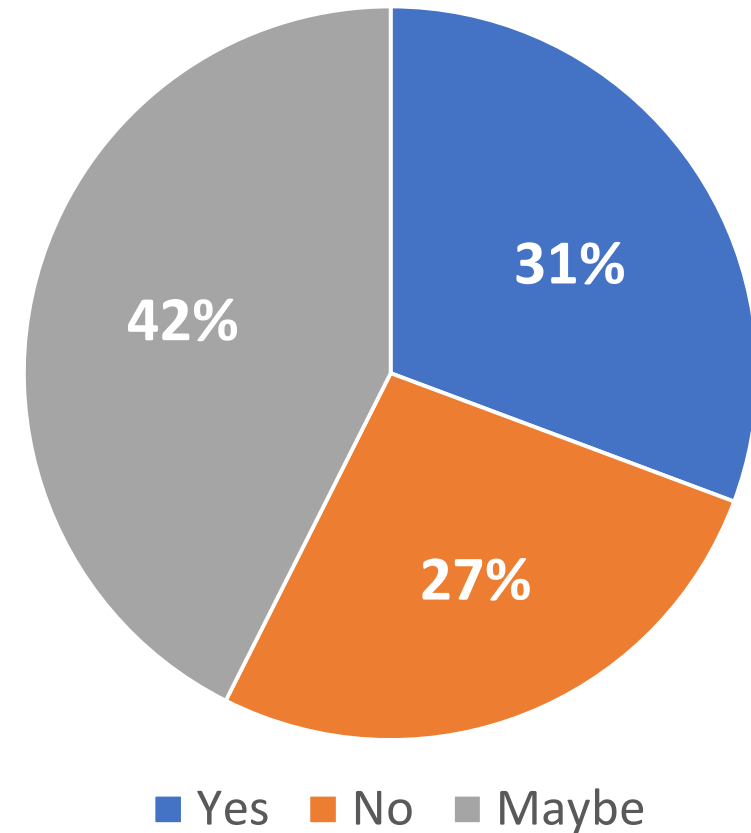
Maps courtesy of Dawn Thilmany, Colorado State University and Tyler Mark, University of Kentucky

Wisconsin Hemp Survey

SOURCE OF START-UP CAPITAL



HAVE YOU FOUND A BUYER?



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/>
- Seed Availability
 - High cost a continuing issue
 - Multiple stories of fraud
- Weather
 - Welcome to Agriculture!
 - Crop Insurance will help
- 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

HEMP BENCHMARKS®	---- 2019 ----		Change
	Aug	Dec	
CBD to Sell			
CBD Biomass \$/%/lb*	\$3.80	\$1.73	-54%
CBD Flower \$/lb	\$414	\$221	-47%
Seed to Plant	Aug	Dec	Change
Clones, each	\$4.67	\$3.53	-24%
Seed, non-feminized	\$2,460	\$1,967	-20%

Source: <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	US Rank	\$ million
Potato	3 rd	\$306
Processed Vegetables	2 nd	\$176
Cranberry	1 st	\$143
Organic Milk	2 nd	\$125
Organic Vegetables	8 th	\$24
Ginseng	1 st	\$50-\$90

- 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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