

Hemp Economics

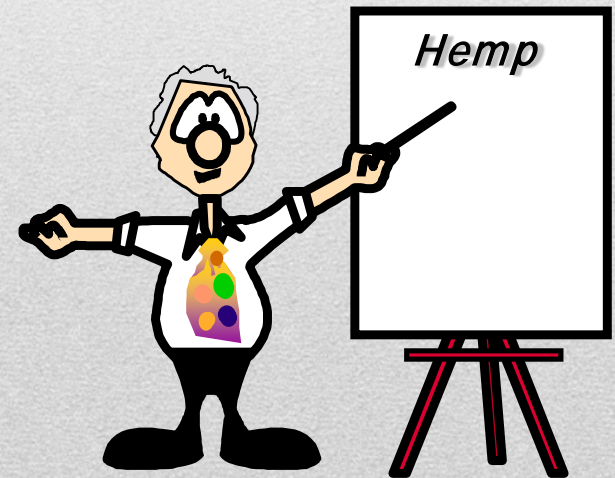
Justin Benavidez

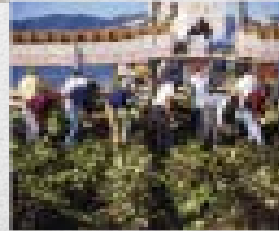
Extension Risk Management Specialist

January 13, 2020

- *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

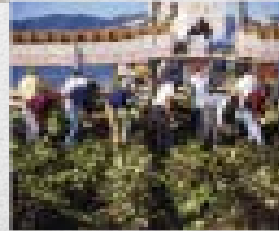
Potential Extra Costs

- 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

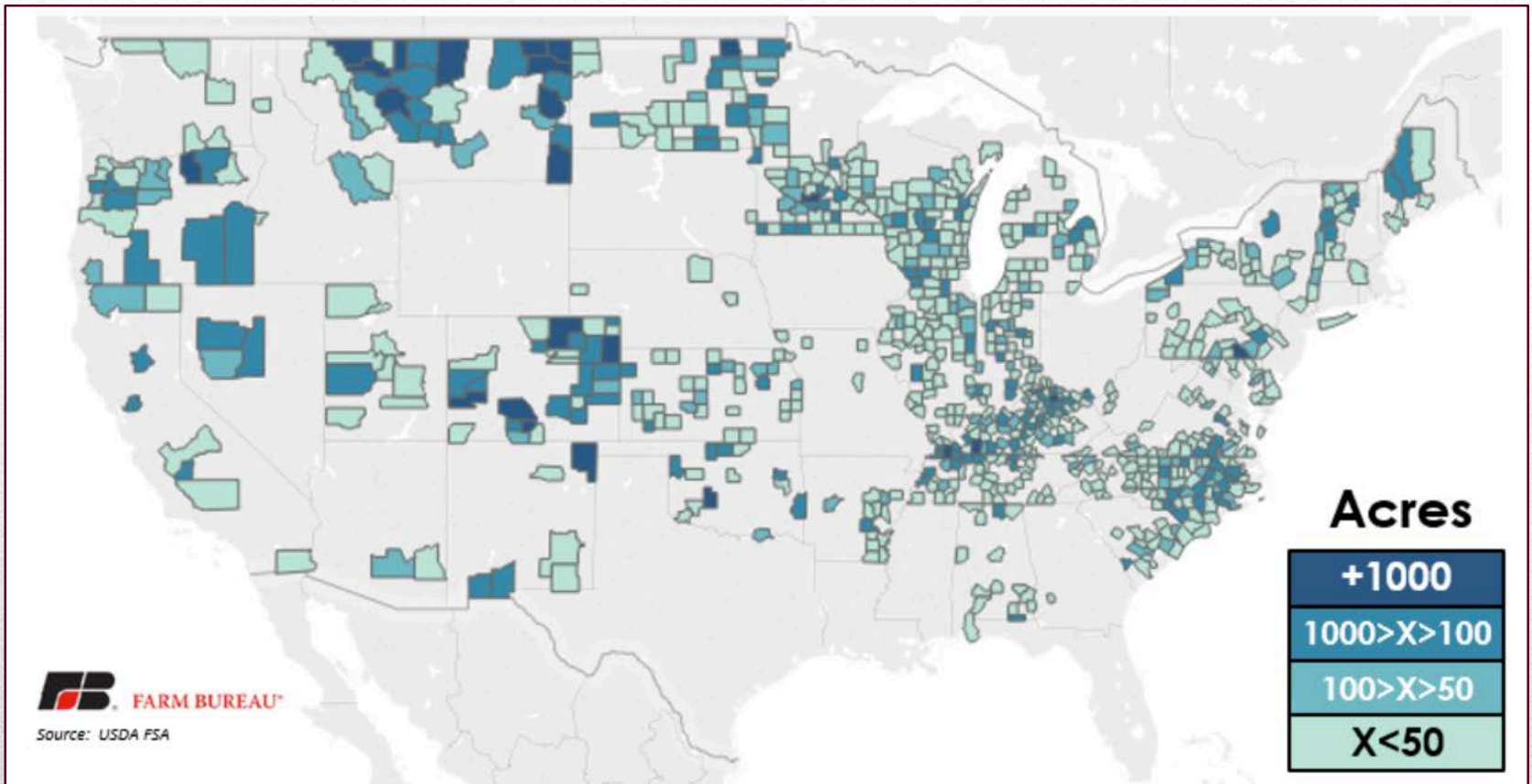
Crop Insurance

- 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

Whole Farm Revenue Protection



Supply



FSA Reported Hemp Planted Acres

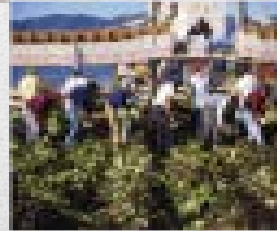
Rank	State	2017	2018	2019	Growth Rate
5	Tennessee	200	3,338	37,416	18608%
4	Montana	542	22,000	40,000	7280%
3	Oregon	3,469	7,808	51,313	1379%
2	Kentucky	3,100	6,700	58,000	1771%
1	Colorado	9,700	21,578	80,000	725%
	Sum	17,011	61,424	266,729	1468%
	Total U.S.	25,713	78,176	310,721	1108%
	Canada		77,929		

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

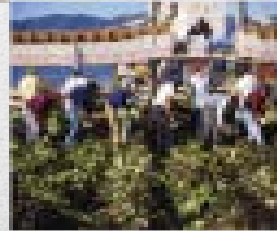
Dallas-based Panda Biotech breaks into hemp business, plans a giant industrial facility

- 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

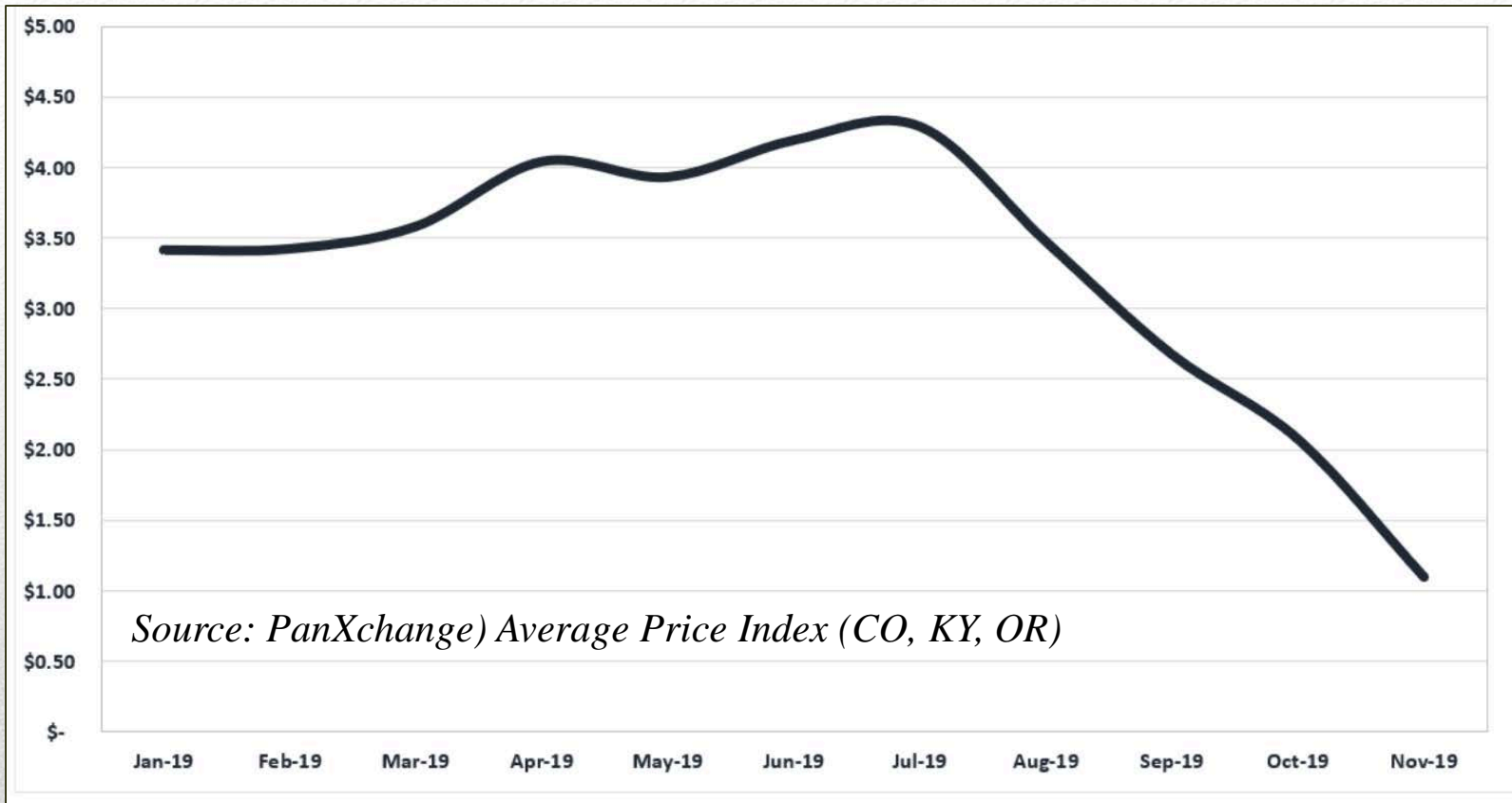
Fiber Model – AFPC 2019 Estimates



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

CBD Model – AFPC 2019 Estimates



Midpoint Biomass Spot Price (per % CBD Content/lb)

Source: PanXchange

Biomass Spot Pricing - November 2019

Source: PanXchange

Region	Midpoint	▲	Low	High
Colorado (per % CBD Content/lb.)	\$ 1.14	-47%	\$ 0.93	\$ 1.35
Kentucky (per % CBD Content/lb.)	\$ 1.03	-53%	\$ 0.80	\$ 1.25
Oregon (per % CBD Content/lb.)	\$ 1.13	-45%	\$ 0.85	\$ 1.40

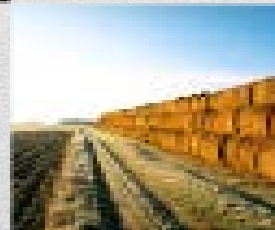
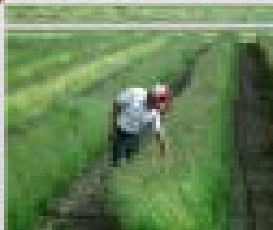
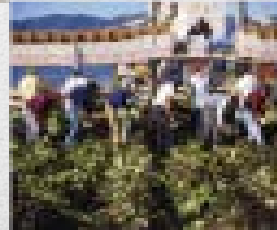
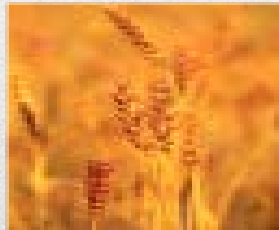
Refined Product Pricing - November 2019

- 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							
Product	Low Yield/Acre (Lbs.)	High Yield/Acre (Lbs.)	Low Price/Lb.	High Price/Lb.	Low Gross Revenue	Average Gross Revenue	High Gross Revenue
Flowers	1,000	1,200	\$ 3.50	\$ 30.00	\$ 3,500	\$ 18,425	\$ 36,000
Fiber	2,000	11,000	\$ 0.07	\$ 0.67	\$ 140	\$ 2,405	\$ 7,370
Grain	800	1,600	\$ 0.65	\$ 1.70	\$ 520	\$ 1,410	\$ 2,720
Sources: Vote Hemp; University of Kentucky, Industrial Hemp Budget 2019; Kentucky Department of Agriculture; Congressional Research Service, Defining Hemp: A Fact Sheet.					Variable Costs		
					Flowers	\$ 28,638	\$ 28,638
					Fiber	\$ 1,077	\$ 1,077
					Grain	\$ 898	\$ 898
						Low Net Revenue	Average Net Revenue
					Flowers	\$(25,138)	\$(10,213)
					Fiber	\$ (937)	\$ 1,328
					Grain	\$ (378)	\$ 512
							High Net Revenue
							\$ 7,362
							\$ 6,293
							\$ 1,822

Costs & Returns Interim Rule



Final Thoughts

- Production
 - Poor seed quality
 - Wind, hail, weeds, pests, etc.
- Harvesting approach
- Contract Risk
- FDA/Regulation
- Available Processing
- Overproduction

Areas of Economic Risk

- 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

Considerations

- 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
<https://agrilife.org/texasaglaw/2019/11/04/video-summary-of-usda-interim-final-hemp-rule/>

Resources

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Thanks!