



Hemp Overview

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Summary:

Arizona

- The total potential market for hemp-derived cannabinoids is estimated \$699 million market, employing an estimated 8,091 jobs, paying \$325 million in wages, and generating up to \$39.1 million in sales taxes
- Arizona is part of a \$28.4 billion U.S. hemp derived cannabinoid market. (Note: this estimate does not include retail sales at grocery stores, gas stations or at on-line retailers)

Historic Market Evolution

- Post 2018 Farm Bill resulted in a surge of U.S. acres producing hemp (82% of acreage was for cannabinoids)
- Excessive inventories resulted in technological innovation and expansion of the hemp-derived cannabinoid market
- Large inventories resulted in rapid decline in prices, increased economic distress and business failures
- Current acreages licensed in U.S. below pre-2018 farm bill levels.

State Legislative Intervention Resulting in Lost Economic Opportunities

- Legislation in Oregon resulted in moratoria of license issuance and conversion of intoxicating cannabinoids into the Oregon Liquor and Cannabis Control regulatory system
- Economic impact to cannabinoid producers in Oregon was the elimination of a \$75 million - \$100 million industry and virtually no opportunity for fiber and grain
- Policy makers must be very precise in the legislative language and intent or run the risk of unintended consequences hurting other sectors or impacting the integrated, national industrial hemp supply chain.

Lack of Federal Regulatory Guidance Forcing Unsuccessful State Interventions

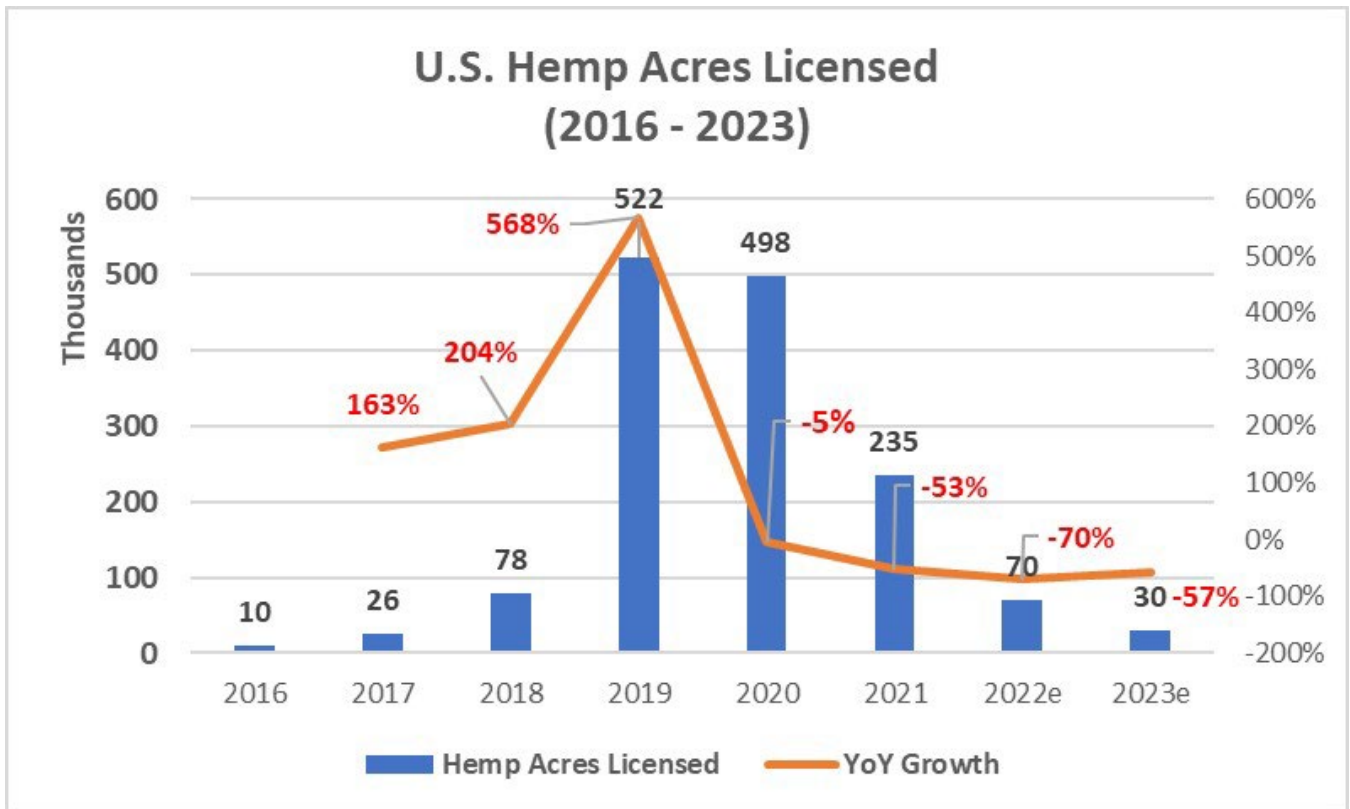
- The operators in the hemp-derived cannabinoid industry have expressed concerns over the lack of federal direction related to the regulation of intoxicating cannabinoids.
- Most hemp-derived operators are requesting regulation without recriminalization, focusing on age verification, product testing and truth in standardized labeling.
- States are unsuccessfully attempting to fix a federal problem at the state level.

Focus Solutions at the Crux of the Problem

- Crux of issues lay in the fact that federal regulations essentially end at the farm gate. What is defined as hemp (USDA) at the farm gate remains defined as hemp throughout the value chain from farm to customer acquisition.
- Regulating at the product level, based on product intention, is a reasonable solution that will reduce the propensity for unintended consequences impacting other sectors of the hemp industry such as fiber, seeds and grains.

Acreage

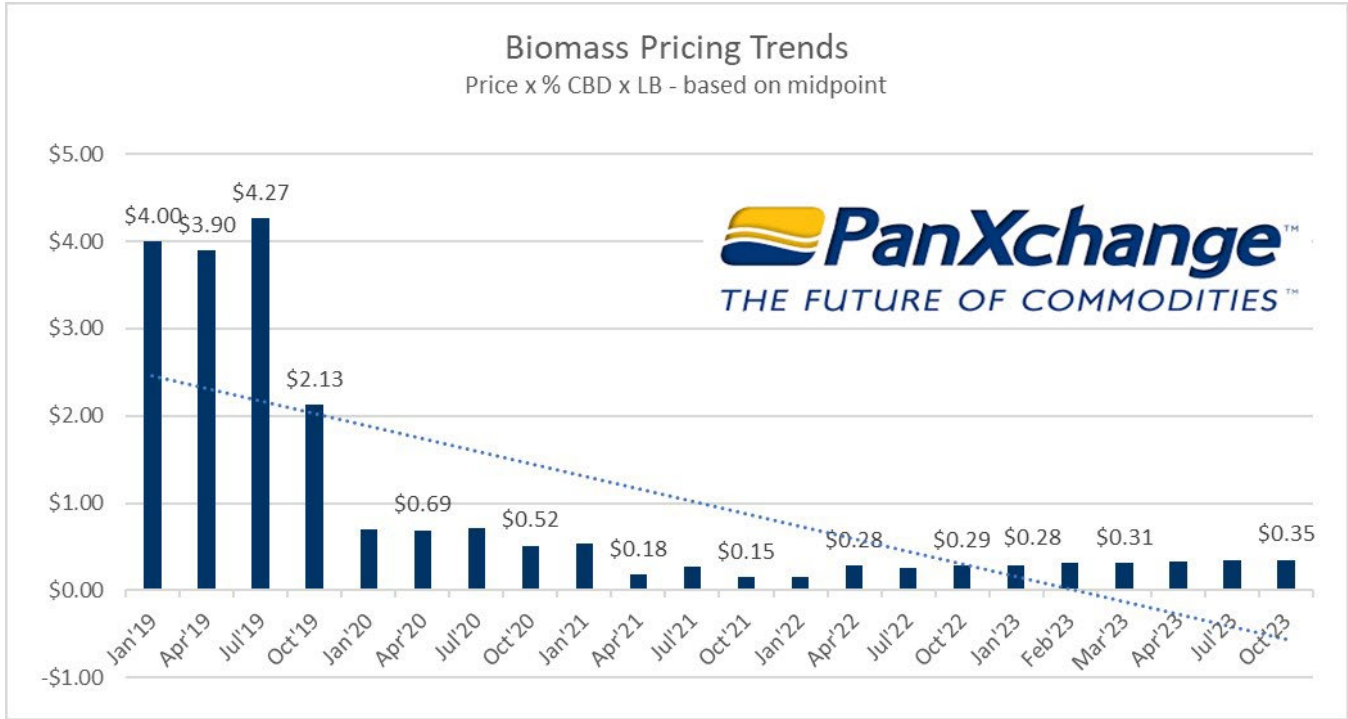
U.S. hemp acreage peaked in 2019 and is now below the levels pre-2018 farm bill. With the consumption and exhaustion of excess inventories, growth of hemp-derived cannabinoid market appears to have peaked and cannot be sustained with so few acres.



Source: Vote Hemp (2016 – 2018), Whitney Economics (2019 – 2023) State Departments of Agriculture

Pricing

Sudden price declines resulted in economic distress and uncertainty in the industry. Industry uncertainty impacted investment and infrastructural development. State legislative focus on hemp-derived cannabinoids reduced economic opportunity for U.S. hemp fiber and grain by \$20 billion - \$25 billion in 2022. With less inventory available, prices have stabilized, however, operators are now forced to source raw and intermediate materials for foreign sources. The U.S. has capitulated the market to non-U.S. suppliers.



Source: PanXchange

Oregon Case Study

Once a national leader in hemp acreage, Oregon’s hemp acreage has reduced by 96.2% since 2019. Oregon does not have a viable hemp industry at the moment. Moratoria in key counties and a hyper focus on cannabinoid cultivation essentially eliminated opportunities for fiber and grain.



Hemp license and acreage data

Year	No. Growers	No. Grow Sites	No. Handlers	No. Outdoor Acres	No. Indoor Acres	Total No. of Acres
2015	13	n/a	13	105	*	105
2016	83	n/a	66	1,200	*	1,200
2017	246	n/a	189	3,000	*	3,000
2018	584	n/a	212	11,514	38	11,552
2019	1,961	6,040	598	63,883	259	64,142
2020	1,811	2,119	595	28,492	250	28,742
2021	875	895	441	8,046	230	8,276
2022	294	290	334	3,071	41	3,112
2023	187	167	227	2,398	19	2,417
2024	15	10	36	55	0.46	55.46

Source: Oregon State Department of Agriculture

The U.S. Hemp-Derived Cannabinoid Market

Based on a national study of hemp-derived cannabinoids, the total potential U.S. market for cannabinoids (CBD, Delta-8, Delta-9, Delta-10, HHC, etc.) is an estimated \$28.4 billion. This does not include demand from grocery stores, convenience stores, or gas stations due to the lack of statistically viable inputs from those retail channels. Approximately \$20 – 421 billion of those sales are done in state that define the products as legal, while the remaining \$7 billion of demand is supported via on-line sales or through non-transitional or otherwise prohibited channels. Roughly 11% of those sales are related to CBD, while the percentage of CBD sales relative to other cannabinoids in grocery stores is much higher.

The Arizona Total Market Data and Statistics for Hemp-Derived Cannabinoids

Total demand potential for hemp-derived cannabinoid products in Arizona is an estimated \$699.1 million. This estimate is based on projections from the roughly 850 smoke shops, vape stores, CBD stores and wellness centers in the state. It does not include CBD sales in grocery stores, for example, nor does it include any potential sales from gas stations or convenience stores. The hemp-derived cannabinoid industry helps support 8,091 jobs and pays approximately \$324.8 million in wages. If the total demand potential was taxed at the standard 5.6% sales tax, this would generate in excess of \$39 million in tax revenue.



What Adult-use Cannabis Regulators can Learn from the Hemp Distribution Model

One of major factors to the rapid growth a hemp-derived cannabinoids industry was the significant levels of consumer access. With federal legality the industry was not bound by the dispensary model and consumers did not have to face the stigma of producing cannabinoids in cannabis stores. This led to wide spread acceptance of cannabinoid products by the general consumer. As a result, there were greater opportunities for cultivators, product manufacturers, distributors and ancillary operators that there would have been is limited to the dispensary models. Several states have considered legislation to restrict sales of cannabinoids to only through cannabis dispensaries, but no state model has become the standard, as the economic impact has been too great. Models suggest that by adopting the hemp distribution model, by allowing wide spread distribution of cannabis, there would be great opportunities for cultivators and product manufacturers with the virtual elimination of illicit market sales. This would address many of the public safety issues associated with unregulated cannabis sales. It appears as though cannabis operators would benefit from the hemp distribution model rather than the other way around.

Conclusion

Arizona is one of many states that is trying to balance public safety and consumer protection with the support of a nascent industry. With the amount of uncertainty and regulator murkiness at the federal level, the hemp industry is hoping states can adopt sensible regulation without being overly burdensome or restrictive or market opportunities. Regulation at the product level, based on intoxication, would allow for the deployment of age verification, testing and labeling regulations, supported by the hemp industry, without inflicting damaging unintended consequences on existing operators, other sectors and ancillary businesses. This would seemingly address many of the public safety concerns, address bad-actors in the space and fulfill many other public policy objectives.

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