

Hemp Value Chains at Ten Years

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REDI Report – August 2023

<https://redi.colostate.edu/>

- Nationally, hemp land area remains less than 15% of 2019 peak levels. Despite this decreasing trend, the share intended for fiber production increased in 2021–22.
- Recent statistics from the 2022 USDA National Hemp Report suggest that hemp producers are younger and less experienced on average as compared to all U.S. agricultural producers.
- Regulatory concerns persist at the Federal level related to the use of cannabidiol (CBD) as a dietary supplement or additive in conventional foods or animal food products.
- A future rebound in the value chain will likely depend on innovation and growth in demand for fiber and industrial applications in construction or manufacturing as opposed to floral or CBD.

The recent U.S. experience with hemp legalization (2014-present) attracted considerable attention. Many observers are particularly aware of the sharp increase, and then decrease, in land area cultivated to hemp during this period. While hemp did not emerge as the widespread, profitable commodity for farmers that many had hoped for, some economic activity, regulatory changes, and policy initiatives continue to advance within segments of the hemp value chain. January 2024 will mark ten years since passage of the 2014 Farm Bill that allowed states to operate pilot programs. This report summarizes recent updates to the U.S. experience with hemp values chains. It considers hemp cultivation, hemp producer demographics, and hemp consumer markets and regulation. Special attention is given to the value chain experience in Colorado, which released a state management plan for hemp in 2021.¹

Hemp Production: Land Area Continues to Decline

USDA Farm Service Agency records show that cultivation increased rapidly from 2014–2019, rising from zero to nearly 150,000 acres (Figure 1). By 2022, however, acreage had fallen to less than 15% of that peak (Figure 2). Hemp can be produced for different types of end products including fiber, grain, and floral.² The share of acres grown for each of these products has changed over time. Hemp grown for floral products (used in CBD products)

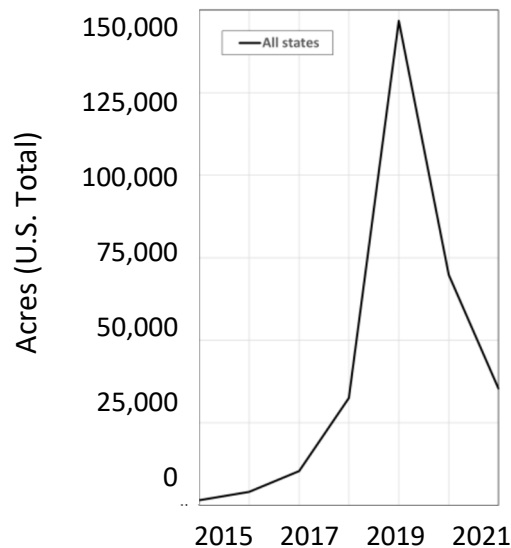


Figure 1. U.S. Hemp Acreage 2014-2021

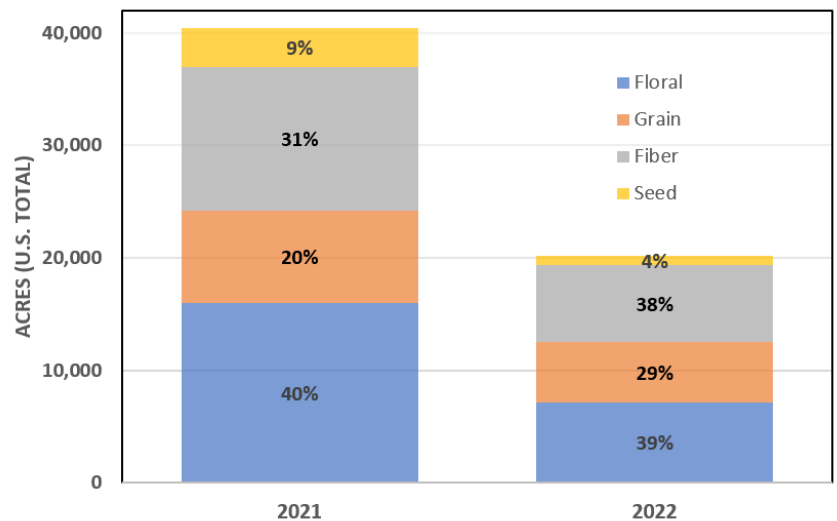


Figure 2. U.S. Hemp Acreage in 2021 and 2022

represents the most land area, but the share intended for fiber and grain products is increasing. As infrastructure to support the processing and marketing of grain and fiber products improves, the share may continue to increase. In 2021, Colorado was first in area planted among U.S. states, but second in area harvested behind Montana. In 2022, Colorado was fifth in area planted but harvested only about one-third of those planted acres.

Hemp is heavily regulated, resulting in production, legal, financial, and marketing risk for producers.³ The risk associated with regulation is one aspect driving the reduction in acres and policy modifications will be important for the future of hemp production. Looking ahead, the 2024 Farm Bill may refine hemp regulations in several key cultivation, processing, and logistical areas. No draft legislation is available at this time, but observers suggest that policy updates may address allowable THC (Delta-9) testing limits and regulation of other hemp-derived THC (Delta-8, Delta-10, etc) products among other testing, transportation, banking, and consumer regulation issues.⁴

Hemp Producers: Younger and Less Experienced on Average

Hemp producer demographics are available in the 2022 USDA National Hemp Report.⁵ The most recent similar information for all U.S. producers, however, is from the 2017 Census of Agriculture.⁶ Highlights include:

- Two thirds of hemp producers (76%) had less than 10 years' experience operating a farm whereas this share for all U.S. producers was far lower as of 2017 (27%).
- The average age of a hemp producers is 49 years, much younger than the average age of 57.5 for all U.S. producers as of 2017.
- Nearly half of hemp producers (47%) listed farming as their primary occupation compared to 42% of producers nationally.
- More hemp producers (14%) identify as American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, or more than one race compared to 4.6% nationally.

We did not identify similar demographics for other segments of the value chain like processing or retailing, nor state-level demographic data specifically for Colorado.

Hemp Demand: More Action Ahead by the FDA

At the Federal level, the Food and Drug Administration (FDA) provides safety, quality, and labeling oversight for human and animal foods, food additives, dietary supplements, and other products. For some hemp-derived products, like CBD, available evidence on how much can be consumed, and for how long, before causing harm has been inadequate and concern remains over the long-term impacts of these products.⁸ As a result, the FDA has not pursued rulemaking on using CBD in dietary supplements, conventional foods, or products for animals.

In January 2023, the FDA concluded that their existing regulatory framework for foods and supplements is not appropriate for Cannabidiols, and that they will work on a new regulatory pathway to balance consumer desire for access to CBD products with the oversight and safeguards needed to manage risks. Looking ahead, some risk management tools that could emerge from this revised pathway include clear labeling guidelines, protocols focused on prevention of contaminants, clearly delineated content limits, and minimum purchase ages for buyers.

Hemp Value Chains: Other Developments

Most states (42 of 50) established a state program to regulate cultivation, while the remainder (8 of 50) rely on the USDA licensing system.⁸ Looking ahead, many state programs are funded by licensing fees, so the decline in hemp area may have fiscal implications for these programs and their ability to support the industry. This reduction in investment in state level programs could have longer term implications for an industry where recent financial losses have caused producers to be hesitant to explore hemp as a future crop as new markets for the product develop.

Past hemp production in the U.S. has largely been focused on CBD (floral hemp) production, but increasingly hemp experts are focusing their attention on fiber and grain hemp production. Hemp is seen as an environmentally- and biodiversity-friendly crop.⁹ For example, the hemp plant is a Phyto accumulator, absorbing heavy metals and other toxins from the soil and can be used in biofuel production.

The consumer perceptions of hemp as a sustainable crop that is good for the environment along with the versatility of the plant positions it to be used in a variety of different markets in the future.¹⁰ The proliferation of hemp products ranges from supplements and food additives to textiles from hemp fibers to plastics, construction materials and polymer additives. Demand for food supplements and food additives, most notably CBD, is unlikely to grow at the originally anticipated levels and no new land area will be needed to meet the current demand. Looking ahead, a rebound in hemp acreage and growth and development in the hemp value chain (in Colorado and nationally) will likely depend on innovation and demand growth in hemp fiber demand and industrial applications in construction or manufacturing as opposed to CBD and floral hemp production.¹¹

End Notes and Further Reading

¹ Hill, R., D. Mooney, and D. Thilmany. (2020). "Making Headway on the Hemp Industry in Colorado: The CHAMP Initiative." *Western Economics Forum* 18(2): 86-94.

² Hill, R., Jablonski, B., Van, L., Wang, M., Patalee, B., Shepherd, J., LeRoux, M., Mark, T., Mooney, D. and Thilmany, D. (2023). "Producers marketing a novel crop: A field-level view of hemp market channels." *Renewable Agriculture and Food Systems* 38(E22). DOI: 10.1017/S1742170523000145

³ Skorbiansky, S., Thornsbury, S. and Camp, K., (2021). "Legal Risk Exposure Heightens Uncertainty in Developing US Hemp Markets." *Choices* 36(1): 1-10.

⁴ Steineker, W. (2023) "The 2023 Farm Bill and the Future of Hemp." Blog, Bradley Arant Boult Cummings LLP. Available online at: <https://www.lexology.com/library/detail.aspx?g=aec3a2ef-6f2d-40eb-8d69-bad891ec4001>

⁵ USDA-NASS (2023). "2022 National Hemp Report: Agricultural Statistics Board Briefing." USDA-NASS, Washington, DC. Available online at: https://www.nass.usda.gov/Newsroom/Executive_Briefings/2023/04-19-2023.pdf

⁶ USDA-NASS (2019). "Farm Producers: Revised Census Questions Provide Expanded Demographic Information." USDA-NASS, Washington, DC. Available online at: https://www.nass.usda.gov/Publications/Highlights/2019/2017Census_Farm_Producers.pdf

⁷ Woodcock, J. (2023). "FDA Concludes that Existing Regulatory Frameworks for Foods and Supplements are Not Appropriate for Cannabidiol, Will Work with Congress on a New Way Forward." Press Release. Office of Commissioner, Food and Drug Administration. Available online at: <https://www.fda.gov/news-events/press-announcements/fda-concludes-existing-regulatory-frameworks-foods-and-supplements-are-not-appropriate-cannabidiol>

⁸ USDA-AMS. (2023). "Status of State and Tribal Hemp Production Plans for USDA Approval." USDA-AMS, Washington, DC. Available online at: <https://www.ams.usda.gov/rules-regulations/hemp/state-and-tribal-plan-review>

⁹ Fortenbery, T. and Bennett, M. (2004). "Opportunities for Commercial Hemp Production." *Applied Economics Perspectives and Policy* 26(1): 97-117.

¹⁰ Lacasse, H., Kolodinsky, J., Reynolds, T. and Darby, H. (2023). "Modeling Hemp as an Innovative Input: An Application of the Diffusion of Innovations in a Sample of Hemp Aware Consumers." *Agriculture and Human Values*, 1-10. DOI: 10.1007/s10460-023-10481-z.

¹¹ Hemp Benchmarks. (2023). "Officials in Major Hemp Producing States Provide Perspectives on the Industry." Available online at: <https://www.hempbenchmarks.com/hemp-market-insider/officials-in-major-hemp-producing-states-provide-perspectives-on-the-industry/>