



What's At Stake?

Hemp is a versatile annual crop and, according to UVM research, is well adapted to Vermont's climate. In 2018, federal laws established hemp as a regulated agricultural commodity. That year, United States hemp sales grew to \$1.1 billion, dominated by cannabidiol (CBD), followed by personal care, food, and industrial products (e.g., building materials, textiles, bio-composites, etc.). From 2016-2018, the first Vermont farms and businesses that jumped in were rewarded with extraordinary prices for their high-CBD hemp. Market research shows the U.S. hemp industry will grow an estimated 19% from 2018-2022, however, as prices paid to producers continue to fluctuate, it is critical that Vermont's hemp sector prepare for where prices are headed, look to the future, diversify, and innovate.

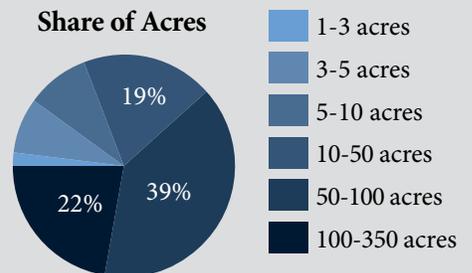
Current Conditions

In the United States, hemp is cultivated for its grain (seed), fiber, or cannabinoids (hemp's beneficial compounds, principally CBD). Vermont's hemp sector has expanded rapidly, driven by U.S. sales of \$390 million for CBD products in 2018. By 2019, cannabinoid production was the focus of 90% of registered Vermont hemp growers, followed by those growing hemp for seed or nursery stock, fiber, food, or "other." Among Vermont's 2019 hemp processors, most plan to dry hemp and/or extract its cannabinoids (64%). Another approximately 22% registered to explore seed oil or fiber processing, however, infrastructure and markets lag for these applications.

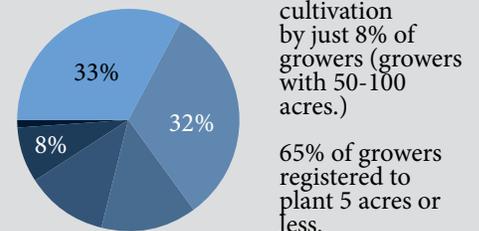
High-quality Vermont hemp biomass for CBD extraction was selling for \$100-\$150 per pound (net profit of approximately \$80,000-\$130,000 per acre) in 2018. As a result, successful 2018 operations expanded in 2019 and a flood of new registrants more than doubled the size of Vermont's hemp program. By November 2019, prices everywhere had dropped sharply to \$25-\$55 per pound. For those growers that rushed in unprepared, lacked a buyer, or harvested too late, 2019 will likely be a setback. Others who had the knowledge, a processing plan, and perhaps a sales contract, will do well.

As 2019 wraps up and Vermont measures its progress, the hemp industry faces regulatory headwinds brought on by USDA Interim Final Rule on the US Domestic Hemp Production Program and uncertainties about what steps the Food and Drug Administration will take to regulate CBD in 2020.

Registered Growers by Acreage Category



Share of Growers

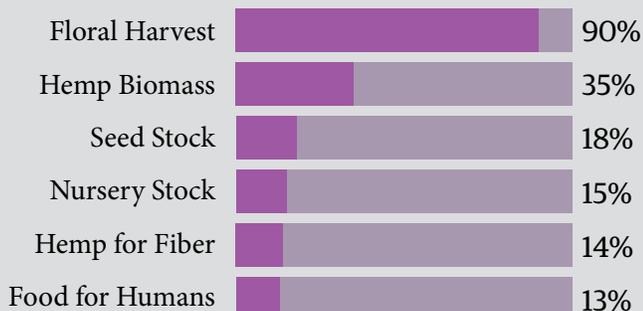


Almost 40% of acres are under cultivation by just 8% of growers (growers with 50-100 acres.)

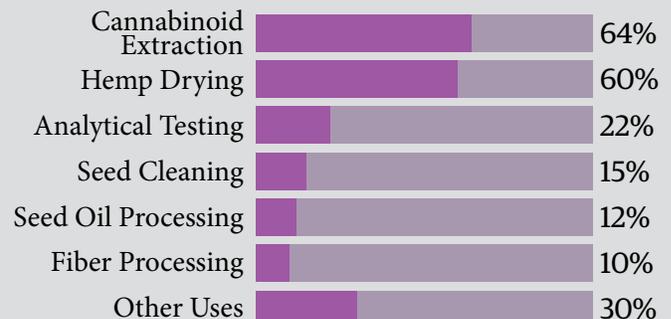
65% of growers registered to plant 5 acres or less.

Percent of Registered Growers and Processors in 2019 Registered for Each End-Use

Registered to grow for:



Registered to process for:



Bottlenecks & Gaps

- Vermont farmers lack access to a high-quality and consistent supply of hemp seed. In 2019, difficulties obtaining seed and sales of poor-quality seed bred a lack of trust in the seed sellers.
- New hemp growers and processors lack industry knowledge and experience, access to markets, peer-to-peer networks, and the technical assistance needed to support informed business decisions.
- The hemp boom has led to an oversupply of high-CBD hemp, contributing to a steep drop in crop prices in Vermont and nationally.
- Due to a lack of sufficient investments in infrastructure at this early stage in the industry, various gaps and bottlenecks have emerged related to hemp production, drying, processing, testing labs, and other forms of infrastructure.

Opportunities

- Vermont's CBD hemp producers are gaining local and U.S. recognition for the quality, integrity, and the originality of their brands, in much the way that Vermont organic products, craft beer, and artisanal cheese have enjoyed market success.
- Hemp-derived CBD is now global and is projected to be a \$2.6 billion industry in the US by 2021. Vermont's climate and culture, the enthusiasm of its farmers and innovative entrepreneurs, and support provided by state government, will contribute to Vermont-branded hemp products enjoying a strong presence in the emerging marketplace.
- The passion of Vermont's hemp industry stakeholders presents an opportunity to prioritize research, development, and investment into other hemp applications, especially fiber, food, and feed.

Recommendations

- State investment in hemp research, education, feasibility, and innovation programs is essential to develop niche food, feed, fiber, and industrial products, professionals, and markets that go "beyond CBD." UVM's Center for Agriculture and Life Sciences and Rubenstein School, UVM Extension, VAAFM, Vermont Sustainable Jobs Fund, and others are recommended to lead or expand such programs. The private sector also needs to accelerate hemp investment, research, and development.
- Additional technical assistance staff is needed to support hemp growers and processors. An allocation of \$200,000 to UVM Extension for two FTE staff is needed.
- UVM Extension should establish and support a hemp seed breeding and certification program over a three to five-year period. The program must engage Vermont growers to create stable genetics for the Northeast that cover the full range of hemp end-uses.
- The Vermont Legislature needs to pass legislation in 2020 approving hemp products (e.g., CBD) for use in food and beverages, and as a food supplement (see Maine's ME LD630 from 2009).
- A working group is making progress towards forming a hemp trade association by Spring 2020. To jumpstart the group, the nascent hemp industry would benefit from two years of state funding to help leverage private funds. A trade association is critical as an information, education, and policy hub, and a clearinghouse for hemp market data. It could take the lead in promoting Vermont hemp products, becoming self-sustaining after two years. Cost: \$50,000 for two years.

Farm to Plate is Vermont's food system plan being implemented statewide to increase economic development and jobs in the farm and food sector and improve access to healthy local food for all Vermonters.

The Vermont Agency of Agriculture, Food & Markets (VAAFM) facilitates, supports, and encourages the growth and viability of agriculture in Vermont while protecting the working landscape, human health, animal health, plant health, consumers, and the environment.

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