



BRIGHTFIELD GROUP

US CBD Market Report

July 2020

Executive Summary

COVID-19 Impact

In the first half of 2020, CBD companies are experiencing a loss in revenue due to store closures and consumer concerns about coronavirus and their finances. Shelter at home policies paused hemp-derived CBD (cannabidiol) sales through many brick-and-mortar retailers that were temporarily closed due to shelter at home policies enacted in March. While grocery, drug, and health food stores remained open as essential businesses during this time, others retailers selling CBD products such as vape shops and CBD specialist retailers either closed temporarily during the crisis or only offered curbside pickup and delivery. While most states and cities reopened by the end of June, a resurgence of COVID-19 cases in the Sunbelt, consumer worries about contracting the coronavirus, and social distancing guidelines are reducing foot traffic to stores. Another challenge for CBD consumers is the rise in unemployment that limits consumers' ability to buy CBD products. The US is experiencing the highest unemployment rate since the Great Depression in the 1930s, with an 11.1% unemployment in rate in June, up from 3.8% in February.

The US hemp-derived CBD market is projected to reach \$4.7 billion in sales in 2020, with 14% growth over 2019 sales of \$4.1 billion. Full year 2020 retail sales not are expected to reach levels anticipated prior to the emergence of the COVID-19 pandemic. In addition to the economic pressures faced by consumers and temporary store closures, inaction by the US FDA (Food and Drug Administration) is constraining growth of the US CBD market.

Price Compression

High unemployment rates and reduction in disposable income brought on by COVID-19 is helping to accelerate price compression in the US CBD industry. Hemp farmers have seen the price of hemp biomass fall due to an oversupply of hemp biomass. In turn, leading CBD companies including Charlotte's Web, Global Widget, Green Roads, and Lazarus Naturals decided to pass on the cost savings of the raw material by reducing prices in the first half of 2020 to reach middle-income consumers and help drive trial.

Innovation Continues

CBD companies are continuing to introduce new products into the marketplace despite the backdrop of coronavirus. They are investing in research & development to go beyond adding new flavors to incorporating functional ingredients such as elderberry, melatonin,

and turmeric alongside launching items that feature minor cannabinoids CBG and CBN alongside CBD to offer additional benefits.

FDA Outlook

Though the cultivation of hemp was legalized following the signing of the 2018 Farm Bill, CBD products remain in regulatory limbo as the FDA does not currently allow CBD products to be marketed as dietary supplements or added to food. The CBD and hemp industry continues to wait for the FDA to review scientific data about the safety of CBD and develop a regulatory pathway permitting the sale of CBD products as dietary supplements and to be used as a food additive. On March 5, 2020, the FDA published a Congressionally mandated report regarding the agency's evaluation of potential regulatory pathways for CBD products, which states that the FDA is evaluating safety data on CBD before it can consider issuing a risk-based enforcement policy to allow products with CBD to be sold legally as dietary supplements. The FDA's latest action was a report on the state of the CBD marketplace submitted to Congress on July 8, 2020. In the report, the agency shared results from a 2020 sampling study of CBD products that found inconsistencies in the CBD content listed on the labels versus the actual content concentrations that are listed on labels and what the products actually contain. A larger follow up study of CBD products is planned for later in 2020.

In the likely case that the FDA creates a regulatory framework for CBD to be marketed as dietary supplements and the mainstream market continues to embrace hemp-derived CBD across the country, the market is expected to grow rapidly, reaching \$16.8 billion by 2025.

US CBD Market Side & Forecast (US \$ millions)

Product Type	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Hemp CBD	\$ 327.4	\$ 627.1	\$ 4,151.4	\$ 4,746.2	\$ 6,135.5	\$ 9,703.0	\$ 12,401.4	\$ 14,847.4	\$ 16,846.7
Tinctures	\$ 148.2	\$ 206.4	\$ 1,015.0	\$ 1,054.4	\$ 1,188.7	\$ 1,807.0	\$ 2,127.9	\$ 2,358.4	\$ 2,568.2
Capsules	\$ 26.1	\$ 76.3	\$ 477.3	\$ 514.7	\$ 645.1	\$ 1,434.8	\$ 1,909.4	\$ 2,235.4	\$ 2,476.4
Topicals	\$ 37.1	\$ 101.8	\$ 703.5	\$ 747.9	\$ 955.1	\$ 1,366.8	\$ 1,644.3	\$ 1,866.2	\$ 2,037.9
Beauty and Skincare Product	\$ 3.9	\$ 16.5	\$ 310.8	\$ 394.7	\$ 498.2	\$ 603.3	\$ 691.4	\$ 777.8	\$ 848.4
Vape Oil and Cartridges	\$ 24.4	\$ 68.1	\$ 479.1	\$ 441.3	\$ 481.1	\$ 512.3	\$ 541.6	\$ 561.3	\$ 576.1
Pre-roll or Flower	\$ 3.3	\$ 11.2	\$ 70.6	\$ 74.8	\$ 82.8	\$ 87.9	\$ 92.7	\$ 96.2	\$ 98.8
Pet	\$ 7.9	\$ 30.7	\$ 320.6	\$ 426.3	\$ 629.2	\$ 793.5	\$ 921.0	\$ 1,031.3	\$ 1,129.6
Gummies	\$ 39.0	\$ 49.1	\$ 308.6	\$ 340.1	\$ 454.7	\$ 1,022.4	\$ 1,395.6	\$ 1,665.7	\$ 1,872.3
Drinks	\$ 6.5	\$ 10.4	\$ 143.1	\$ 194.1	\$ 317.9	\$ 780.2	\$ 1,345.1	\$ 1,988.1	\$ 2,387.7
Other Edibles	\$ 19.5	\$ 37.9	\$ 90.5	\$ 78.0	\$ 104.5	\$ 243.2	\$ 427.4	\$ 615.0	\$ 749.7
Pharmaceuticals	\$ -	\$ 4.7	\$ 215.3	\$ 463.3	\$ 761.3	\$ 1,034.3	\$ 1,287.0	\$ 1,633.9	\$ 2,082.9
Syrups, Dabs and Others	\$ 11.4	\$ 14.0	\$ 16.8	\$ 16.4	\$ 16.9	\$ 17.4	\$ 17.8	\$ 18.1	\$ 18.5

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Impact of COVID-19 on CBD Market

The global COVID-19 pandemic is constraining growth for CBD (cannabidiol) companies in 2020. Americans are experiencing financial pressures and loss of employment as shelter in place policies enacted in March 2020 were followed by a roll-back in re-openings in some states and cities. The surge in COVID-19 cases in June and July in the Sunbelt have led to temporary and permanent closures of many small businesses. CBD companies have been unable to sell their products in many retail channels or market at trade shows. Companies that are better positioned to weather the storm are CBD firms that have a compelling digital marketing strategy, robust e-commerce capabilities, and a recognized brand.

In 2020, the US hemp-derived CBD market is projected to reach \$4.7 billion in sales, with 14% growth from 2019 sales of \$4.1 billion. With Americans facing high unemployment levels (11.1% in June 2020 compared to 3.8% in February 2020) year 2020 retail sales are not expected to reach levels anticipated prior to the emergence of the COVID-19 pandemic. In addition to the economic pressures faced by consumers and temporary store closures, inaction by the US FDA (Food and Drug Administration) is constraining growth of the US CBD market.

As Americans shelter in place during the COVID-19 pandemic, CBD companies are facing both challenges and opportunities. A major challenge is the loss of revenue from store closures as many retailers selling CBD products have either closed temporarily during the crisis or are only offering curbside pickup and delivery. Even for CBD specialist retailers and smoke shops that remain open, they are experiencing steep declines in sales as social distancing guidelines and consumer worries about contracting the coronavirus keep shoppers at home. Another challenge is consumers' reduced ability to buy CBD products as the US is experiencing the highest unemployment rate since the Great Depression in the 1930s. Over 30 million Americans are receiving unemployment benefits as of July 14, 2020.

A strong e-commerce presence is especially important for CBD companies during this time as early stay-at-home orders shuttered retailers and sent many consumers to e-commerce. Many consumers reduced visits to stores when stay at home policies were in effect and are still wary of visiting physical stores. Nearly half (45%) of CBD consumers surveyed in June 2020 have moved their CBD purchases online because of the coronavirus crisis. Millennial shoppers are the most likely to have switched to e-commerce for their CBD needs, with 54% reporting switching from brick and mortar stores to online as they also increase their usage and spending during this stressful time. CBD market leaders have seen online sales increase dramatically in the first half of 2020 but are still making efforts to expand in brick and mortar retailers to set up for future success and broader brand awareness. CBD companies with extensive DTC (direct-to-consumer) experience, a database of e-

newsletter subscribers, and a large social media following have been able to reach out to their consumers and sell through their brand websites.

In addition to having DTC capabilities, CBD companies that have a well-recognized brand and a strong digital marketing strategy are expected to fare best in this challenging environment. During this time of crisis and economic upheaval, consumers are looking to familiar and trusted brands. As consumers continue to minimize trips to stores or choose to buy online and pick up in stores (i.e., click and collect), CBD companies will not have the benefit of relying on employee recommendations at CBD specialist retailers and health food stores and point-of-purchase materials to influence consumers. CBD brands can maintain a direct connection with consumers and provide education about CBD through emails, blogs, and social media. At the same time, new CBD companies will find it difficult to enter retail channels as in-person sales calls have been paused and major trade shows such as Natural Products Expo West and NoCo Hemp Expo have been cancelled.

As consumers turn to CBD for anxiety relief during this stressful time, increased consumption of CBD is expected, particularly among heavier users. With most of the country sheltering in place while workers considered to be essential brave through fears of contracting coronavirus to report to work, anxiety levels are skyrocketing. Anxiety is the number one ailment of CBD users, with 42% of them reporting it according to Brightfield Group's consumer insights. Depression and insomnia, which are likely to rise over the coming months, rank second and sixth. In a Brightfield Group survey of 5,000 CBD consumers fielded online from June 2 to 24, 2020, 39% stated that they are using more CBD as a result of the COVID-19 crisis. This sentiment was even higher among Millennials and Gen Z consumers – 47% plan on using more CBD in the months to come. Younger consumers are more likely to increase their CBD usage in response to the COVID-19 pandemic. More than half of Millennials (51%) and 48% of Gen Z have upped their CBD usage frequency, compared to only 40% of Gen-X and 17% of Boomers.

Among the CBD categories, edibles (including tinctures, capsules, and gummies) are expected to perform better in the near term. Almost a third (33%) of US CBD consumers stated in June that they are using more edibles. Heavy users of CBD use tinctures and capsules once or twice daily as part of their routine, with some users likely to use more in the near-term. Many are reporting a switch to a higher dosage. In contrast, vapes are seeing a decline during the crisis despite offering faster relief from anxiety than other CBD products. 21% of CBD consumers stated in June that they are using fewer inhalables. Negative media attention surrounding the potential risks of vaping is likely discouraging new entrants into vaping. As COVID-19 is a respiratory illness, many medical professionals are advising consumers to quit smoking and vaping as they believe that vaping and smoking

tobacco or marijuana puts individuals at greater risk for developing serious complications if they contract COVID-19.

Price Compression

High unemployment rates and reduction in disposable income brought on by COVID-19 is helping to accelerate price compression in the US CBD industry. Hemp farmers have seen the price of their crops drop sharply due to the increase in supply. According to data from Hemp Benchmarks, the aggregate assessed price for hemp CBD biomass declined by 79% from April 2019 to April 2020, from \$38.00 per pound to \$8.10 per pound. As companies have installed more efficient hemp extraction equipment and expanded manufacturing facilities, production costs have also gone down.

Taking advantage of lower raw material and production costs, leading CBD companies including Charlotte's Web, Global Widget, Green Roads World, and Lazarus Naturals decided to pass on the cost savings by reducing prices in the first half of 2020 to reach middle-income consumers and help drive trial. Many companies also expanded their use of limited-time price discounts on their websites beginning in mid-March as they responded to the stay at home orders that temporarily shuttered stores. Where companies may have in the past conducted 25% 24-hour flash sales once every two months, price discounting such as 20% off sitewide or buy one get one at 50% off promotions continue to be plentiful as of mid-July.

Lower prices will help draw new consumers into the CBD market and help convert them into loyal shoppers. Compared to 2019, more middle-income consumers (household income of \$40,000 to \$75,000) are using CBD in 2020 and now account for nearly one-third of CBD consumers. In addition to addressing increased price sensitivity due to impacts of the coronavirus pandemic, falling prices of CBD products will also help meet the needs of these middle-income consumers. When deciding on a CBD product to purchase, price is the second ranking product attribute that consumers consider according to Brightfield Group CBD consumer surveys in March and June 2020 (second only to "desired effect," or the perceived ability to provide results). More specifically, consumers are looking for products that fit within their budget, but still deliver effective relief. CBD sales volume will continue to rise as new consumers enter the market across a broad range of product formats, partly thanks to more friendly pricing. However, this ongoing price compression will constrain the overall value growth of the market.

Companies Continue to Focus on Innovation

Innovation in CBD continues to be active despite many employees working remotely and meetings with retailers and distributors taking place on Zoom instead of in person. Companies are going beyond adding new flavors and are investing in research & development to introduce new products that contain botanical ingredients and minor cannabinoids CBG and CBN alongside CBD to offer additional benefits.

Immunity support is a key area of focus in 2020 for CBD companies as consumers seek out ingredients that support immune health such as elderberry, echinacea, and vitamin C during the coronavirus pandemic. Bluebird Botanicals' new Immune Support+ Vitamin D3 & CBD Oil combines a full-spectrum hemp extract blend with vitamin D3, which promotes a healthy immune response. Medterra's new Immune Boost Drops combine elderberry, echinacea, vitamin D, ginger root, ashwagandha, vitamin C, reishi mushroom, and lemon balm to support immune health with the calming power of CBD.

CBD companies are also beginning to incorporate minor cannabinoids including CBG and CBN alongside CBD as combining cannabinoids and terpenes (found naturally in hemp) are believed to produce the "entourage effect" where the compounds work synergistically to enhance the effects of each component. The price of CBG has also come down recently as hemp farmers have found methods to cultivate hemp strains with higher CBG percentages. CBDfx's Wellness 2:1 CBD + CBG Tincture offers a 2:1 ratio of CBD to CBG along with 18 proprietary terpenes, Curcumin, and Coenzyme Q10 to boost the entourage effect. CBDistillery's Relief + Relax CBD CBG 1:1 Oil combines the benefits of CBD and CBG. CBG (cannabigerol) is believed to have antimicrobial, analgesic or anti-inflammatory properties. CBD American Shaman's CBNight Water Soluble CBN Oil is a blend of cannabinoids to promote better sleep, without the common side effects of sleep aids. CBN (cannabinol) may have antibacterial and anti-inflammatory benefits but is best known for its sleep-enhancing benefits.

Product innovation is also occurring as consumer packaged goods and pharmaceuticals companies enter the CBD market. Church & Dwight introduced Vitafusion CBD Full Spectrum Hemp Extract Gummies in December 2019 as CBD gummies from America's #1 gummy vitamin brand. The gummies are made with full spectrum hemp extract and come in three varieties - CBD Full Spectrum, CBD Sleep Well (with melatonin), and CBD Chill Mood (with L-Theanine to provide calm and relaxation). Hello Products (now owned by Colgate-Palmolive) introduced Hello CBD Soothing Mouthwash and Fluoride Free Toothpaste in February 2020, which are formulated with broad spectrum hemp oil and hemp extract and contain additional ingredients such as aloe vera, coconut oil (to soothe and moisturize) and tea tree oil or activated charcoal (to reduce bad breath). In the beauty and skincare arena, luxury beauty brand Chantecaille introduced its first CBD product - CBD 300 Face and

Body Cream – that combines the soothing, calming benefits of broad-spectrum CBD with eggplant stem cell extract, Cannabis Sativa stem cell extract, and Cherimoya extract to visibly enhance skin’s moisture content and reduce visible redness. Tea company Brew Dr. launched its Tranquil Kombucha With CBD that merge herbs such as rosemary, mint, and sage with Oregon-grown CBD from East Fork Cultivars. GlaxoSmithKline ventured into CBD with its February 2020 launch of 36 Bushels topicals line that incorporate botanical ingredients. 36 Bushels promises triple tested ingredients and that they carry out over 36 quality checks, hence the 36 Bushels name. The line uses broad spectrum derived extracted from USA-grown hemp, is guaranteed 0.0% THC, and is crafted in small batches with consistent quality.

Many consumer packaged goods companies – especially food and beverage – are rationalizing their portfolios and focusing on core brands, rather than variety and innovation. This is to help streamline supply chains and reduce complexity in the uncertain environment created by the coronavirus. CBD companies and brands are doing the opposite and rolling out innovation at a high pace to draw in new consumers and keep existing CBD users interested in the industry. New functional ingredients can be a helper in bringing new consumers to CBD, especially as natural ingredients complement the many uses of CBD and help consumers better understand how to incorporate these products into their daily or weekly wellness habits. Featuring these products that also offer accessible price points can help drive incremental CBD sales for convenience operators and encourage routine purchases. Major players such as CBDfx and Medterra who have rolled out innovation at a rapid pace in 2020 have been rewarded with increased brand awareness and sales in this challenging time.

FDA Outlook and Scope of the Market

Although the cultivation of hemp was legalized following the signing of the 2018 Farm Bill, CBD products remain in regulatory limbo as the US FDA (Food & Drug Administration) does not currently allow CBD products to be marketed as dietary supplements or added to food. The CBD and hemp industries are waiting for the FDA to create a regulatory framework allowing the sale of CBD products as dietary supplements and to be used as a food additive. Until the FDA permits the sale of dietary supplements and the use of food as a food additive, national retailers such as Target and Walmart are unlikely to sell CBD products. Even many retail chains such as CVS and Walgreens that currently sell topical CBD products have chosen to stay away from ingestibles (e.g., capsules, gummies, tinctures) due to legal concerns. In the likely case that the FDA creates a regulatory

framework for CBD to be marketed as dietary supplements and to be used as a food additive, the hemp-derived CBD market is expected to grow to \$16.8 billion by 2025.

The beginning of 2021 is the earliest time that the FDA is likely to introduce a regulatory framework that allows for the sale of CBD as a dietary supplement and as a food additive as the agency has stated that it needs more data on the safety of CBD products before considering a pathway for CBD. On March 5, 2020, the FDA published a Congressionally mandated report regarding the agency's evaluation of potential regulatory pathways for CBD products that reiterated its prior statements that CBD cannot be marketed as dietary supplement or used as a food additive. In light of the FDA's ongoing safety concerns around CBD, the agency stated in the report that it wants interested parties to share information on CBD and reopened its public docket that it had established for its May 2019 public hearing.

On July 8, 2020, the FDA submitted a report to Congress that provided results from a sampling study of the current CBD marketplace to determine the level of mislabeling and adulteration. Out of the 102 products that specified the amount of CBD, the FDA found 46 products (45%) contained CBD within 20 percent of the amount indicated while others contained less or more than the amount of CBD indicated. Only one of 133 samples tested had potentially hazardous materials (arsenic, cadmium, lead, and mercury). In the report, the FDA stated that they expect to initiate a long-term study involving a wider range of CBD products including face and body lotions, vape pens, and suppositories. A third party would be hired to conduct a product sampling and testing study to test for 11 cannabinoids, total CBD and THC levels along with analyses of pesticides, residual solvents, and microbial testing.

A House bill, H.R. 5587, designed to speed up the FDA's safety evaluation efforts is unlikely to get passed in 2020 as Congress has more pressing concerns around saving the American economy. On January 31, 2020, the Chairman of the House Committee on Agriculture, Rep. Collin Peterson (Minnesota) introduced H.R. 5587, legislation that would allow CBD to be permitted in dietary supplements. The bill would amend the Food, Drug, and Cosmetic Act to include CBD in the definition of a dietary supplement. It would mandate that the US Department of Agriculture to complete a study and report on the market and regulatory barriers for hemp producers.

Market Size & Projections

- In the likely case that the FDA creates a regulatory framework for CBD to be marketed as dietary supplements and the mainstream market continues to embrace hemp-derived CBD across the country, the market is expected to reach \$16.8 billion by 2025.

- CBD is projected to become a \$4.7 billion market by the end of 2020, with 14% growth from 2019. Strong growth will continue in the medium-term, with an expected 2020-2025 CAGR of 29%.

Growth Drivers

- **Extensive media coverage and natural health and wellness trends:** Growing awareness of CBD's health benefits, combined with a movement toward natural alternatives to pharmaceuticals, is driving consumer demand for CBD products.
- **Expanded distribution channels:** CBD products went mainstream in 2019 as CVS, Walgreens, Kroger, Albertsons, and other national retail chains began to sell CBD products in their stores. Sephora has expanded its selection of CBD products in 2020.
- **Strategic marketing:** CBD companies are using multiple methods including social media, podcasts, radio ads, print media, and infomercials to reach consumers.
- **Product variety and evolution:** The growing diversification and sophistication of CBD products appeals to a much broader consumer audience beyond cannabis users and natural food store consumers.

Top Players in the Industry

- **Charlotte's Web** maintains the largest market share among hemp CBD companies (1.6%), followed by **Medterra** (1.3%), **Green Roads World** (1.2%) and **CBD American Shaman** (1.1%).
- A number of new and formidable players are now competing successfully on the market, including multi-state cannabis operators and legacy supplements manufacturers.
- Year 2020 has seen Charlotte's Web acquire Abacus Health Products and Aurora Cannabis buy Reliva CBD.

Evolution of Distribution Channels

- E-commerce is the largest distribution for CBD products with a 39% share in 2020, growing from 32% in 2019 as consumers shop online to avoid visiting stores.

- Pharmacy holds the second largest share with a 14% share, up from 10% in 2019 as demand for Epidiolex, a prescription pharmaceutical formulation of highly purified, plant-derived CBD, continues to grow sales.
- Others holds the third largest share with a 12%. Others includes department stores, home shopping channels, and dollar stores.
- Publix supermarket chain, the Bluemercury beauty specialist chain, and the QVC home shopping channel have begun selling CBD products.

Product Types and Innovations

- **Tinctures** still dominate the market, driving 22% of sales in 2020, but they are losing their lead as more mainstream consumer-friendly products surge.
- **Topicals and beauty and skincare products**, with a 16% and 8% share of the market in 2020, respectively, have gained tremendous traction as mass retailers have signed on to carry these products first, since they are considered the safest bet under the current regulatory regime.
- **CBD drinks** and pet products are also continuing to see high rates of revenue growth and innovation, with both categories growing their share of market from 2019 to 2020. From sparkling waters, to kombuchas, to ready-to-drink coffees, and energy shots, new innovations are satisfying the growing consumer demand for the familiar and convenient format.
- **Pet products** continue to be a popular topic in the CBD industry as concern for pet health and wellness continues apace. Pet chain leaders Petco and PetSmart, along with specialty pet chain, Bentley's Pet Stuff began selling pet CBD products in 2020.
- As hemp-derived CBD is extremely versatile, companies have begun infusing it into everything from facial scrubs and sunscreen to sparkling water, beer and coffee, appealing to a greater variety of mainstream users.

Definitions

Hemp & Marijuana

How are hemp and marijuana different? And CBD vs THC?

Cannabidiol (CBD) is a chemical compound found in the cannabis plant and is known for its pain relief, anxiety and stress reduction, anti-convulsant and anti-inflammatory properties, among others. CBD is one of the main cannabinoids contained within the cannabis plant, as is tetrahydrocannabinol – or THC. Though THC has medicinal properties, it is better known for its “high” or psychoactive effects.

Hemp and marijuana are members of the cannabis plant that has two main subspecies – Cannabis Indica and Cannabis Sativa. Hemp is a member of the Sativa species while marijuana belongs in both the Sativa and Indica families.

Hemp – one variety of the cannabis plant – is naturally high in CBD and contains very little (typically less than 1 percent) THC content, thus derivatives of the hemp plant do not have intoxicating effects. Given the increasingly recognized medicinal properties associated with CBD and the cannabinoid’s high concentration in the hemp plant, hemp extracts have become a major source of CBD products and their production and sale have grown tremendously in recent years, especially following the signing of the 2018 Farm Bill which distinguished industrial hemp from marijuana. The Agriculture Improvement Act of 2018 (also known as the 2018 Farm Bill) defined hemp as follows: “The term ‘hemp’ means the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta- 9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis.”

Marijuana - another variety of cannabis – typically contains 5 percent THC or more. Marijuana is bred to have a wide spectrum of properties, some strains with extremely potent THC and some more focused on CBD or other cannabinoids, and is unambiguously considered a Schedule 1 substance (where drugs with no currently accepted medical use and a high potential for abuse are classified) by the U.S. Drug Enforcement Administration.

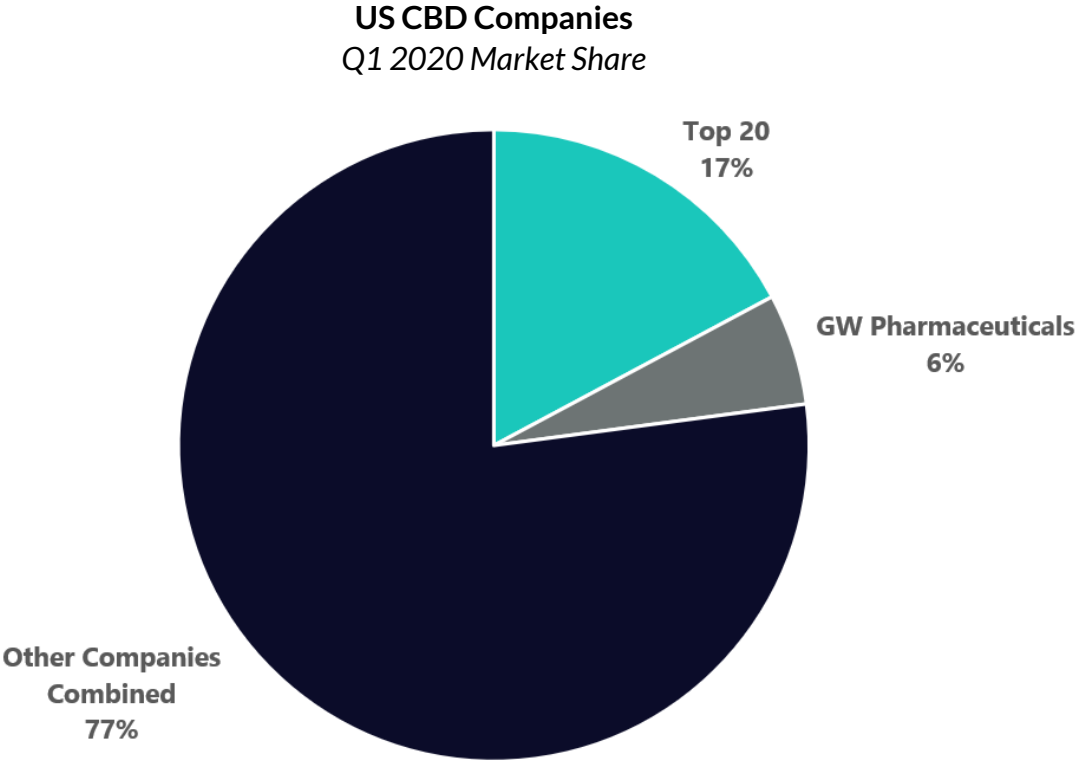
Methodology

Brightfield Group’s market size estimates and forecasts are generated using a methodology that incorporates the data and perspectives of the various parties that influence this dynamic, multi-faceted industry. This allows our analysts to provide the most realistic insight possible into this opaque market. Our research is strongly focused on manufacturer, industry, retailer and distributor interviews, coupled with information attained from company financial documents, consumer sales and survey data drawn from thousands of hemp CBD users, as well as extensive desk research

Competitive Landscape

The US CBD market has become even more saturated in 2020, with a continuous flood of new or established companies creating CBD products and lines to join the thousands already present in the market. Because the market is seeing both expansion and consolidation in 2020, the top 20 brands have technically lost share but still maintain the majority piece of a now larger pie.

The top 20 CBD companies hold over a 17% share of hemp-derived CBD sales in Q1 2020. However, the competitive landscape looks quite different following the passing of the 2018 Farm Bill, as established CBD players have now been joined by competitors from other industries backed by a great deal of resources that were not seen in the market prior to 2019.



Industry Influences

The industry is now being strongly influenced by the following primary groups of competitors:

- **Powerful CBD-only companies**, which have been able to further develop reputations and establish brand loyalty, refine and improve marketing strategies, and grow larger and more diverse customer bases despite barriers faced under past and current regulatory systems. Examples: Charlotte's Web, CV Sciences
- **Cannabis companies**, typically multi-state operators (MSOs), leveraging vast dispensary and retail distribution networks, supply chain infrastructure, brand recognition and capital to create or expand successful CBD lines. Examples: Curaleaf Hemp, Columbia Care
- **Supplement brands** with natural food store and mass retail chain connections, nutraceutical marketing experience, capital to invest, and established customer bases that are particularly prone to purchasing CBD-infused wellness products. Examples: Barlean's, Garden of Life, Irwin Naturals, NaturesPlus
- **Disruptors**: Those CBD brands little-known prior to 2019, even in CBD circles, who have made tremendous headway over the course of months, many being picked up by large retail chains and thrust into the spotlight. Examples: cbdMD, Medterra, Sagely Naturals
- **Pharmaceutical companies**: GW Pharmaceuticals brought Epidiolex onto the U.S. market at the end of 2018 and its revenues have grown dramatically since that time. Though considered separately from top CBD supplement companies for the purposes of this study, GW Pharmaceuticals carries considerable weight in the US CBD industry of 2019 and additional pharmaceutical companies and products are expected to join the market and play an even more important role in the future.
- Though only just beginning to dip their toes into the U.S. market, a number of **Canadian Licensed Producers (LPs)** with tremendous cannabis infrastructure and connections, legitimacy and investor dollars attained via public exchanges in Canada, have expressed intentions to aggressively pursue the U.S. CBD market, namely via buy-outs and M&As. Examples: Aurora Cannabis (Reliva CBD), Canopy Growth Corporation (BioSteel, First & Free, , thisworks), Cronos Group (Lord Jones), Tilray (Manitoba Harvest, Pollen)
- **Consumer packaged goods (CPG)** behemoths such as Coca-Cola, Anheuser Busch InBev, and Unilever have been circling the industry prior to the legalization of industrial hemp cultivation and are eager to establish a name for themselves early. These companies are ready to join the competition as soon as a pathway is cleared by the FDA, especially when it comes to food additives and dietary supplements.

The availability of federal research funds and dozens of clinical trials underway will also lead to increased innovation, improvement and diversification of medications and supplements derived from CBD, driving even more investment from the health industry.

Though in the past the consolidation process has driven a great deal of market share away from smaller companies, there has been such an uptick in the number of CBD market participants following the passing of the 2018 Farm Bill that those earning less than \$1 million in annual revenues occupy over 97% of the market.

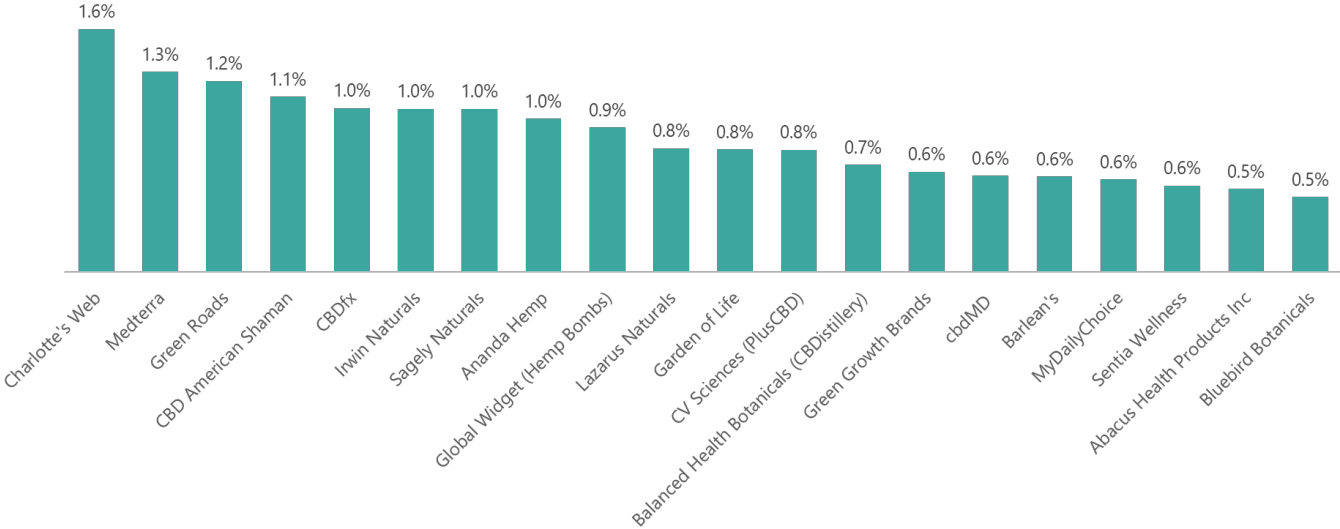
Market Breakdown

- **0.3%** of companies were in the **top tier** (with annual sales of \$40+ million)
- **0.7%** of companies were in the **mid-high tier** (with annual sales of \$10-40 million)
- **1.3%** of companies were in the **mid-tier** (with annual sales of \$1-10 million)
- **97.7%** of companies were in the **low tier** (with annual sales of <\$1 million)

Top 20 Companies

Q1 2020 Top 20 Companies by Retail Sales Value

Total Q1 2020 CBD Sales = \$1.86 billion



Many formerly mid-sized or even small but strategic CBD companies had surged, alongside competitors from a range of outside industries, to compete with market leaders in 2019. 2020 will be a challenging atmosphere for all competitors, and those with strong digital strategies and direct to consumer online sales will be poised to outperform others in the wake of the COVID-19 pandemic. Meanwhile, new CBD companies are likely to have trouble gaining traction in 2020 with in-person sales calls paused and major trade shows such as Natural Products Expo West and NoCo Hemp Expo being cancelled.

Q1 2020 Top 20 Companies

Q1 Rank	Company	Q1 Retail Sales	Q1 Share
1	Charlotte's Web	\$28.9 M	1.6%
2	Medterra	\$23.8 M	1.3%
3	Green Roads	\$22.7 M	1.2%
4	CBD American Shaman	\$20.9 M	1.1%
5	CBDfx	\$19.5 M	1.0%
6	Irwin Naturals	\$19.4 M	1.0%
7	Sagely Naturals	\$19.4 M	1.0%
8	Ananda Hemp	\$18.2 M	1.0%
9	Global Widget	\$17.2 M	0.9%
10	Lazarus Naturals	\$14.7 M	0.8%
11	Garden of Life	\$14.6 M	0.8%
12	CV Sciences	\$14.5 M	0.8%
13	Balanced Health Botanicals	\$12.8 M	0.7%
14	Green Growth Brands	\$11.9 M	0.6%
15	cbdMD	\$11.4 M	0.6%
16	Barlean's	\$11.4 M	0.6%
17	MyDailyChoice	\$11.0 M	0.6%
18	Sentia Wellness	\$10.3 M	0.6%
19	Abacus Health Products Inc	\$9.9 M	0.5%
20	Bluebird Botanicals	\$8.9 M	0.5%

Projected Q2 2020 Top 20 Companies

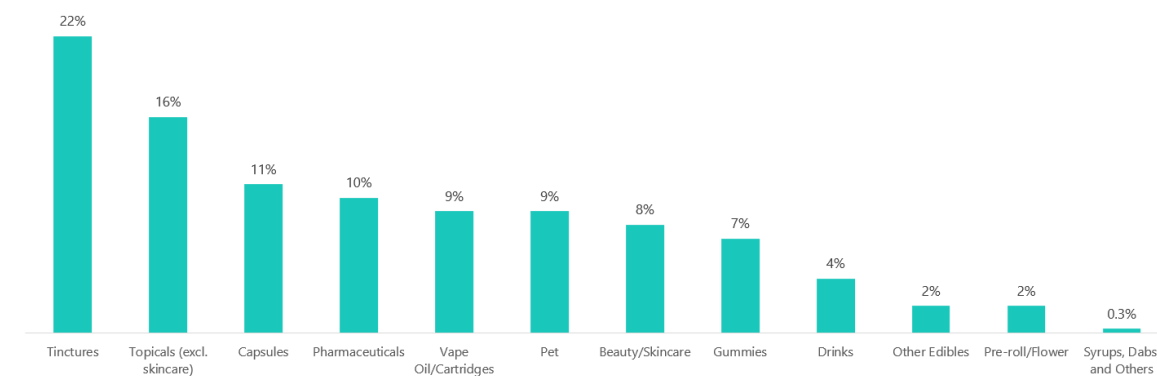
Q2 Rank	Company	Q2 Retail Sales	Q2 Share
1	Charlotte's Web	\$29.6 M	2.7%
2	Medterra	\$25.5 M	2.3%
3	CBDfx	\$21.2 M	1.9%
4	Green Roads	\$21.1 M	1.9%
5	Sagely Naturals	\$20.5 M	1.9%
6	Global Widget	\$15.7 M	1.4%
7	Ananda Hemp	\$15.4 M	1.4%
8	Irwin Naturals	\$15.1 M	1.4%
9	Balanced Health Botanicals (CBDistil	\$13.5 M	1.2%
10	Lazarus Naturals	\$13.1 M	1.2%
11	CBD American Shaman	\$12.1 M	1.1%
12	Garden of Life	\$11.8 M	1.1%
13	CV Sciences (PlusCBD)	\$11.4 M	1.0%
14	cbdMD	\$10.7 M	1.0%
15	Barlean's	\$8.6 M	0.8%
16	MyDailyChoice	\$8.0 M	0.7%
17	Abacus Health Products Inc	\$7.4 M	0.7%
18	Sentia Wellness	\$6.8 M	0.6%
19	Bluebird Botanicals	\$6.1 M	0.6%
20	Mary's Brands	\$6.0 M	0.5%

Product Type Breakdown

Tinctures remain the largest part of the market in 2020, followed by topicals, capsules and pharmaceuticals. That lead is narrowing, however, as the landscape changes and the hemp-derived CBD industry evolves and expands. The market is no longer entirely dominated by sufferers of extreme pain or epilepsy who must go to great lengths to attain product, nor primarily by cannabis consumers. Instead, droves of mainstream consumers had been venturing pre-COVID-19 into chain pharmacies, pet stores and their local natural food store aisles to try CBD-infused anti-inflammatory cream, bath bombs, or sparkling water, as well as seeking out calming and natural remedies for their pup's anxiety or cat's sore joints. These decisions are dramatically changing the nature of the market, especially when it comes to product types.

Hemp-derived CBD can be increasingly expected to follow in the footsteps of other mainstream consumer product categories. Bolstered by the eventual entry of major consumer packaged goods (CPG) manufacturers, and because CBD is so versatile, products will range from nutritional supplements to over-the-counter medications to traditionally smoked products to skincare, and beyond. Not only is CBD now (and increasingly) available in retail outlets across the spectrum, but the array of product formats being sold is evolving quickly. Today, CBD products emerging are similar to multi-vitamins, La Croix Sparkling Water, or Bengay, and are beginning to overtake what has historically dominated the CBD market, items like tinctures and gummy bears.

2020 Hemp-Derived CBD Product Splits



Tinctures, also called CBD oil or “drops”, have been the indisputable best-sellers since CBD entered the public consciousness. They consist of base liquids such as hemp seed or MCT oil, combined with potent hemp CBD extracts. Tinctures come in bottles with built-in droppers. An easy-to-use, full dropper applied under the tongue provides consumers with desired effects over a relatively short time period, and with relatively precise dosing. Because of these characteristics, as well as their long shelf lives, tincture products remain a popular choice among many CBD consumers.

While tincture products still reach a broad and diverse audience, use has become concentrated among Baby Boomers and Generation X. Tincture use is split relatively evenly across gender. Tinctures – like the majority of CBD products – remain popular for treating anxiety and chronic pain but appeal particularly well to those suffering from insomnia (almost 26% of tincture users). Given their long-standing presence as a staple in the hemp-derived CBD market, tinctures and oils continue to make up an important component of virtually all manufacturers’ portfolios in 2020. They are widely available throughout distribution channels, with the exception of chained retail outlets not yet willing to carry ingestible products, and are particularly popular in smoke shops, natural food stores, online, and at CBD-specific retailers.

The importance of tinctures in the overall CBD wellness market, however, is fading. In 2018, they made up 33% of the market, dropped to 24% in 2019, and hold 22% of the market in 2020. While still witnessing an impressive compound annual growth rate (CAGR) of 19% from 2020-2025, tinctures’ growth will be significantly lower than that of the general CBD market, which will see a 29% CAGR.

There are several factors involved in the expected relative drop in popularity:

Price: CBD tinctures tend to be expensive, with one-ounce bottles typically costing \$40 depending on CBD concentration and some high-dose formulations selling for as much as \$275 today. Their high prices will make them less competitive relative to other products now entering the market. Furthermore, as tincture prices are driven down to better compete, lowered prices will correspond with decreasing market revenues.

Familiarity: The average consumer is unfamiliar with tinctures; the concept is foreign to most who operate outside the cannabis and medical realms, because it simply is not a common delivery channel for most products. As a more varied and broad pool of consumers overtakes the market, diverse and well-positioned product lines take shape and compete for an increasingly sophisticated and selective market, the unfamiliar will slowly be outpaced by the familiar – e.g., capsules and gummies.

Infrastructure: Large CPG (consumer packaged goods) companies are expected to enter the space in the medium-term and adapt their existing products to incorporate CBD or create their own CBD lines leveraging existing branding to successfully grow in the space. This being the case, rather than working to develop or offer tincture products, these operators will instead look to goods they already have the equipment and infrastructure to

produce (such as beverages or topical creams) and that appeal to established target audiences.

Although they will lose steam over time, tinctures will remain a significant driver of revenue in the near term and CBD manufacturers focused exclusively on the cannabinoid are very much still committing research & development, marketing dollars, and shelf space to these products.

Topicals & Skincare

Topicals

Topicals continue to be a big force in pharmacies and grocery stores as the majority of the retailers in these channels only sell topicals and skincare products. After the FDA declared that CBD supplements and food additives would not be permitted for retail sales in the US pending the establishment of a regulatory framework allowing for this, retailers – and consequently, manufacturers – gravitated en masse toward the topical and skincare product categories in 2019, seeing them as less risky undertakings. For the purposes of Brightfield Group research, the topicals category includes CBD-infused lotions, balms, massage oils, and suppositories that are absorbed through the skin and are designed to provide localized relief. Skincare and beauty products – often also applied superficially – are considered separately from topicals because these categories of product are uniquely marketed and positioned and will grow in distinct ways.

The US CBD topicals market continues to expand in 2020, with strong growth expected over the longer-term, primarily for the following reasons:

Retail outlets: With the top three retail pharmacy chains picking up CBD-infused topicals since Q2 of 2019 (CVS, Rite Aid, Walgreens), topicals became the first products to arrive on the mainstream market and became widely available to consumers. Many additional retailers - both independent and chain – have followed suit, looking to tap into the vast demand for CBD while playing it safe with regulatory agencies. For example, Kroger grocery began carrying topicals in June 2019, followed by Kohl's in October 2019, and thousands of independent entities, such as health practitioners and spas, have entered the market in 2019 in order to offer exclusively topicals. Even retailers who were carrying CBD products prior to the 2018 Farm Bill are now much more interested in topicals – smoke shops with CBD on their shelves, for example, nearly universally carry topicals in 2020 versus only 12% carrying them in 2018.

Accessibility and approachability: Not only are CBD-infused topicals now widely available on retail shelves, but they make for an easy entry point into the CBD market. Consumers

intimidated by a bottle of tincture or edibles – either because of its purchase price or because it has to be ingested (which has social implications, raises more concerns about THC levels, driving, interactions with other medications) – could buy sample-size topical products or pre-COVID-19 try CBD using the testers at the store, relieved of most fears and any serious financial commitment. Since these products tend to be applied for quick alleviation of symptoms, they often have near-immediate effects, and each user can quickly and simply determine whether and how a topical product will help them in their unique circumstances – thus making an informed and confident decision and, in many cases, committing to purchasing larger or more expensive products (both within and outside this category) as a result. As numerous companies boosted the CBD content in their topical products without raising prices in the first half of 2020, topical products can be viewed as a more attractive option for immediate pain relief.

Broad appeal: Topicals generally draw consumers looking for localized relief from symptoms of chronic pain, inflammation or tension – a box that can be ticked by a tremendous portion of the US population. From those with joint health and nerve issues to those with emotional health and anxiety symptoms, CBD topicals offer not only an alternative to OTC and pharmaceutical products, but one that can be applied discreetly. Topicals are also being particularly well-promoted by the various athletes being sponsored by CBD manufacturers, given their applicability to sports medicine (anti-inflammatory and pain relief) and thus are being seen more frequently by a wide audience of sports viewers, further normalizing topicals products and advocating for their efficacy against these and other symptoms suffered by the general population.

Consumers are increasingly turning to these products for therapeutic relief from the discomforts brought on by their conditions – so long as they are effective and contain safe ingredients – two main concerns for topicals users. Like tinctures, topicals appeal more to older generations comfortable with this application method, with CBD users aged 56+ comprise 23% of the user base.

Users of CBD topicals are using it to treat chronic pain, with 36% of CBD users stating that they suffer from chronic pain. Other physical conditions such as arthritis and fibromyalgia are also commonly treated with topicals.

CBD-infused topical products have applications to a great deal of ailments suffered by the population. As adoption increases over time with the unfurling of additional clinical data and broader, more effective marketing campaigns, accompanied by product refinement and improvement, CBD topicals will cut into not only the \$5.2 billion over-the-counter analgesics market (2018) but have great potential to garner share from the pharmaceutical market for topical products as well, especially as the backlash against pharmaceuticals continues

Skincare and Beauty Products

Skincare and beauty products are items such as face masks, body lotions, bath bombs, and lip glosses - some of which are applied topically but few of which are generally used to treat chronic physical medical conditions. Skincare and beauty products are highly similar to topicals in terms of the implications of the 2018 Farm Bill and subsequent FDA announcement. As such, they are generally considered less risky by manufacturers and retailers and are being adopted extremely quickly across the country. In addition, skincare and beauty products are extremely versatile – giving producers a great deal of room for innovation in this space. They reach a very different audience than general topicals, thus skincare and beauty products are projected to follow their own unique trajectory both in terms of distribution channels and overall growth.

What will drive this growth?

A growing self care movement: Growing interest in taking care of oneself, whether it is through yoga, meditation, or alternative medicine, is likely to be a boost for CBD sales. CBD skincare and beauty products offer indulgence and contribute to a feeling of pampering and relaxation.

A younger audience ready to spend: As is to be expected, the buyer base for beauty and skin care products consists largely of women, and many users are younger - millennials make up approximately half of CBD beauty and skincare product users. However, these products appeal to consumers across the age range who have demonstrated themselves disposed to spend generously on skincare and beauty products. Those operating in this space have the opportunity to tap into not only the \$51.6 billion US beauty & personal care market but an \$8.1 billion beauty market.

Influencers and media: Millennials – the foundation of the skincare/beauty market – are strongly driven by influencer marketing, thus promotions of skincare and beauty products have been and will continue to be extremely effective via this channel (see: Olivia Wilde, Kristen Bell, Jennifer Aniston, Leighton Meester, Mandy Moore, etc.). This gives CBD skincare and beauty companies an excellent advertising avenue in what remains a challenging formal advertising space. Popular magazines and media outlets like Vogue, GQ, Us and Cosmopolitan magazines, are also willing and eager to cover innovative and trendy CBD-infused beauty and skincare products, which brings great press to this product category. Lord Jones's collaboration with actress Kristen Bell on new CBD skincare line is highly anticipated. Bell's brand, Happy Dance, will be priced more affordably than the luxury Lord Jones line.

Room to grow:

There is a great deal of room for innovation in this sector, which will continue to help beauty and skincare products maintain their freshness in the public eye and penetrate further retail channels. Already, products beyond the basics, such as exfoliants, tissue repair serums, blemish creams, and bath bombs, are becoming more popular and pervasive in diverse retail sectors. Not only hundreds of chain pharmacies, grocery and supplement stores, but independent spas, dermatologists, and gyms, have been particularly willing and interested in adopting these products.

Once the FDA determines the safety of CBD products, the CBD skincare and beauty segment is expected to see a great deal of additional activity stemming from the entry of major CPG companies into the sector. Skincare and beauty products will be of interest to mass skincare brands like Neutrogena, Aveeno and Burt's Bees who may develop lines of CBD-infused lip balms, sunscreens and facial cleansers (among others) for daily use among average consumers. In addition, pricier beauty-oriented products (e.g., wrinkle-reducing or moisturizing creams, age-defying foundation, bag-reducing eye serums) will likely be developed by higher-end brands such as Estée Lauder, La Mer and Chanel. When these big names enter the space with their capital, brand followings, distribution networks and innovations, consumer reach will expand dramatically.

As a result of their rapid launch into mass retail outlets beginning this year accompanied by a boom among independent retailer and their impressive social media traction and the buzz created among celebrities, CBD-infused skincare and beauty products reached a large enough consumer audience to become a \$395 million market in 2020 – making up 8% of total CBD sales. They are forecast to grow to a \$2.1 billion market by 2025, comprising a 5% share of total CBD sales.

Inhalables

Vape Oil and Cartridges

Vape oil cartridges and pods have become a common way to consume hemp-derived CBD. With the slow pace of full medical and recreational marijuana legalization, smokable hemp CBD vapes have started to increase their popularity as a substitute for marijuana vapes, with consumers seeking them out for fast-acting relief from certain health conditions without the “high” associated with marijuana, or to partake in the “vaping trend”. A number of consumers also perceive vaping as a healthier alternative to smoking and use these products as a substitute or supplement to tobacco products. With the “vape crisis” surfacing in mid-2019, however, the perceptions of vapes as a healthy option has eroded somewhat, though more strongly among cannabis users than CBD users. This changing perception could dampen the long-term growth prospects for CBD vapes. According to research fielded by Brightfield Group in November 2019, nearly one-third (29%) of hemp-

CBD vape users had decreased their usage of hemp-CBD vapes after hearing the news of the crisis, while 9% have stopped using them altogether.

The Centers for Disease Control (CDC), the FDA, and state and local health departments have been investigating the national outbreak of lung injuries associated with the use of e-cigarette and vaping use. While many of these e-cigarette or vaping product use-associated lung injury (EVALI) cases have involved THC-containing e-cigarette products obtained online or in the illicit market, there is the possibility that the FDA could restrict sales of all electronic vaping devices as the department has instituted more restrictions on the sale of e-cigarettes with nicotine. On December 20, 2019, President Donald Trump signed legislation raising the federal minimum age of the sale of tobacco products (cigarettes, cigars, and e-cigarettes) from 18 to 21 years. On January 2, 2020, the FDA announced a ban on flavored cartridge-based e-cigarette products (other than tobacco or menthol). In response to the vaping crisis, eight states - Massachusetts, Michigan, Montana, New York, Oregon, Rhode Island, Utah, and Washington - had enacted bans, some of them temporary, in 2019 on e-cigarettes and vaping devices, especially on flavored products.

The vaping industry continues to face difficulty. In the early part of COVID-19 pandemic: multiple media reports on possibility of vaping increasing health risks. 21% of US CBD consumers surveyed in June 2020 stated that they are using fewer inhalables, compared to only 4% who planned to cut back in March.

Traditionally, vape cartridges have been found primarily in cannabis dispensaries and smoke shops, accompanied by an array of vaping accessories. Established cannabis brands, especially vape-focused brands (e.g. Select), already present in dispensaries and recreational shops have helped boost CBD vape sales in these channels. These companies have successfully leveraged their unique existing distribution networks to get more CBD products onto dispensary shelves, tap into the CBD growth within the cannabis market and translate this to an early-mover advantage on the broader consumer market. In 2019, the presence of CBD vape products also expanded in less traditional channels, including natural food stores (which are more than twice as likely to carry vapes compared to 2018) and alternative health care offices, as well as blowing up in outlets where tobacco products are commonly found, such as convenience stores and gas stations.

The use of vapes is relatively evenly spread across age groups, though it skews slightly younger, being the most popular among Millennials. Vapes appeal slightly more to singles than married people, though little difference is seen along gender or political lines. Despite the popularity of vaped CBD among those on the political right, a handful of states with conservative leans (Louisiana, Texas, North Carolina) have worked to limit or outright ban smokable hemp products – efforts not generally seen in more liberal states. Due to COVID-19 related concerns and the development of these state-level laws, the 2020 CBD vape market is expected to decline by 8% to reach \$441 million in sales in 2020, and to grow slightly to generate \$576 million in sales by 2025.

Pre-Rolls / Flower

Pre-rolled CBD joints are most common among millennials and men, though they are among the least popular CBD products overall. Pre-roll flower is not as discreet as other consumption methods, and is often associated with the “stoner” stereotype and corresponding stigma surrounding cannabis smoking – which has led law enforcement to confuse it with marijuana, leading to arrests, and state governments (Indiana, Kentucky, Louisiana, and Texas, for example) to place more restrictive laws upon CBD flower’s sales. CBD pre-roll’s associations with cannabis have also deterred many mainstream consumers from trying it in the early days of CBD on the mainstream market, but this product type and its potential should not be underestimated, as the demand for it is growing. CBD flower made up a \$75 million market in 2020, which is projected to grow to \$99 million by 2025 as an increasing pool of consumers learn about CBD and its various wellness and medical uses and seek more quick and inexpensive methods of consuming product.

While often used to treat anxiety, chronic pain and insomnia, hemp CBD pre-roll products are also highly popular among consumers with nausea, PMS, and PTSD, and are frequently being employed as a tool to support smokers in their efforts to quit or decrease tobacco cigarette use. Given this delivery system’s similarities with tobacco smoking, it eases smoking-related cravings but does not contain the nicotine that consumers are looking to distance themselves from – nor the high associated with marijuana, making it a viable and cost-effective alternative. The greater availability of hemp flower and pre-rolls along with its versatility make these products valuable for some CBD consumers. Hemp flower can be used by individuals rolling their own joints, either on its own, or in combination with marijuana flower. Some use hemp flower to make their own CBD oil or CBD-infused butters.

Capsules

Capsules – also deemed soft gels and gel caps and inclusive of dissolvable tablets – continue to be a mainstay of the CBD market, particularly supported by men, who are significantly more likely to use this product type than are women. Sold as a nutritional supplement akin to Vitamin C or Ginkgo Biloba, capsules are designed to be taken orally on a regular basis, are discreet and precisely dosed, and are the most similar product to the traditional nutritional and dietary supplements seen on retail shelves in the past, making them a great fit for more conservative or all-natural users who are comfortable with this delivery method. CBD capsule product uptake has been similar across age groups.

Capsules are one of the first CBD product categories in which mainstream influence has already begun in earnest, as large supplements manufacturers such as Garden of Earth and Irwin Naturals have entered the market with capsule products that are ramping up very quickly, and a number of additional major brands (Centrum, One-A-Day), along with their merchant-specific counterparts (e.g., Kirkland/Costco, Trader Darwin/Trader Joe’s), are

posed to do so as well, once comfortable with the regulatory landscape. Furthermore, mainstream retailers such as GNC and The Vitamin Shoppe have already begun carrying these products in a growing portion of their stores, and capsules continue to be sold abundantly via natural food retail channels.

Vitamins and nutritional supplements – a great deal of which are sold in capsule format – were expected to make up a \$32 billion market in 2019, and CBD capsules are set to begin occupying significantly more market share in this space over time – growing from a \$515 million market in 2020 to a \$2.5 billion market by 2025, which represents an impressive 26% CAGR. Some of this growth will displace that of CBD tinctures, which are expected to lose steam as more easily recognized product formats like capsules become available to mainstream consumers.

Pharmaceuticals

The pharmaceuticals channel is comprised of products distributed by prescription only, as authorized by the FDA. At this point, all pharmaceutical products being sold are from GW Pharmaceuticals plc under the brand name Epidiolex, since this was the pioneering prescription plant-based CBD medication to make it onto the US market with formal FDA approval and remains the only one permitted for sale today. Epidiolex is an oral formulation of purified CBD designed to treat seizures associated with Lennox-Gastaut and Dravet Syndrome, two rare and severe early-onset, drug-resistant epilepsy syndromes. Epidiolex sales are limited to the patients (and families of patients) who suffer from these rare conditions and can afford and gain access to the medication. At Epidiolex's launch, prescriptions could only be dispensed in limited states and pharmacy outlets, leading to bottlenecks in supply which continue today as patient access continues to expand. Despite the small market for rare seizure conditions and supply barriers, Epidiolex sales have been impressive.

In November 2019, a reported 3,000 physicians had dispensed prescriptions for this product, and more than 15,000 patients had already received prescriptions, with more signing on to the expanded access program. Though 2018 sales following the British company's US launch in November 2018 were limited, pharmaceutical market revenues driven by Epidiolex sales reached \$292 million in 2019. On April 6, 2020, the company announced that it had received notification from the US Drug Enforcement Administration (DEA) confirming that Epidiolex is no longer subject to the Controlled Substances Act (CSA). Epidiolex had initially been placed in Schedule V of the CSA. All federal controlled-substance restrictions have been removed for Epidiolex. The descheduling of Epidiolex enables doctors to prescribe the medicine free of the requirements of state prescription drug monitoring programs.

As of March 2020, two of the 40 clinical trials expected to be completed by the end of the year have already been completed. It is likely that a fraction of these studies will lead to the FDA approval of CBD-based medications for epilepsy and other conditions, which will subsequently enter the pharmaceuticals market in the medium-term. In anticipation of this combined with the continued growth of Epidiolex sales, the CBD pharmaceuticals market is set to reach \$2.1 billion in 2025.

Edibles

Edible hemp-derived CBD products, such as gummies, candies and gum, chocolate, baked goods, and beverages, are not only growing in popularity among current CBD users, but drawing in a host of new users given their approachability and familiarity to the average consumer.

These CBD products have been a useful and popular delivery channel used to address a wide range of symptoms, especially side-effects from cancer treatment (e.g., nausea, pain, insomnia), since edibles are often easy on the stomach and have slower release and longer-lasting effects. Because they are easy to consume, discreet, and tend to taste good, CBD-infused edibles are also a great option for first-time users. Thus today, this category has become the home of many trendy products that have been bolstered by CBD's sudden launch to fame – gourmet chocolates, lattes, and CBD enhanced cocktails are proliferating across the country.

Though the edibles categories continue to make up a smaller fraction of the market, retailers and consumer data reflect an increasing demand for edibles – especially drinks – over the forecast period. Smaller revenue figures reflect a reluctance by retailers to sell foods and drinks containing CBD as the FDA has stated that it not lawful to add CBD to food. However, with the impending FDA authorization of edible products, followed by the inevitable entry of behemoth CPG companies into the space, combined CBD edibles sales should show strong growth.

Gummies

- Usage is high across all age groups
- The gummy market is set to achieve \$340 million in sales in 2020, and is set to reach \$1.9 billion in 2025, representing a 41% CAGR
- Gummy products have been present on the CBD market for years. Gum, mints, and sublingual strips are included in the gummies category. Though not innovative in nature, they have been and remain quite popular, and have begun to be positioned as a product akin to gummy vitamins, with specialized qualities and characteristics being highlighted, bolstered by additional ingredients. For example, Charlotte's

Web now offers “Calm”, “Sleep” and exercise “Recovery” gummy products designed for different mood states, with each product carrying different ingredients such as melatonin (known to support sleep) to amplify or supplement the effects of the CBD. The gummy vitamin market worldwide was worth over \$3 billion in 2018 – roughly half of which is estimated to be US-driven – thus prospects for growth in this market alone are promising.

Drinks

- Users lean younger, with Millennials as the largest consumer group
- The 2020 drinks market is set to achieve \$194 million in sales in 2020, up 36% from 2019. CBD-infused drinks will see a 65% CAGR between 2020 and 2025.

Innovative edible products – particularly drinks – are a welcome choice for those looking for a new delivery method more in-keeping with their lifestyles and have thus become highly popular among consumers new to the market, and manufacturers and retailers have taken notice.

In 2019, CBD-infused lattes were found at cafes throughout the country (the lion’s share of which did not offer these products in 2018) and a host of manufacturers, such as Green Roads World and HempWorx, are now selling CBD-infused coffee. CBD-infused beer has begun to pop up from craft breweries like Coalition Brewing Co. in Oregon and is being researched by massive names in the beer space, such as Anheuser-Busch InBev. Sparkling waters, energy shots, and workout beverages (including protein shakes) have made their way onto various retail shelves, and CBD-infused “functional wellness beverages” are already being eyed by Coca-Cola.

US retail sales of sports and energy drinks amounted to \$18.2 billion in 2019. Beer sales in the country totaled \$37.2 billion (2019) in off-premise channels, and in 2019, US coffee shop revenues reached \$47.5 billion. There are extraordinary opportunities for growth in the CBD-infused beverage sector, whether drinks are positioned for functional wellness, athletic endurance, or simply as a substitute or supplement to alcohol.

Other Edibles

- Millennials and Generation X are largest user groups
- Other edibles made up a \$78 million market in 2020 and are expected to reach \$750 million by 2025, representing a 57% CAGR

Other edibles include anything outside the beverage and gummy categories, such as chocolates, baked goods, savory products, snack bars and sports nutrition. A number of CBD companies offer these products: Restorative Botanicals carries a caramels line, Diamond CBD sells honey products, cake pops and popcorn, and Fishski Provisions offers a

Hemp CBD Hatch Green Chile Mac and Cheese – though “other” edibles haven’t garnered the same attention nor traction as drinks or gummy products, and will continue to play a secondary role on the CBD market in the future as well. In addition to CBD’s inclusion in indulgent products such as baked goods and chocolates, CBD has a role to play in sports nutrition, as both pre-workout enhancement and post-workout recovery.

Pet CBD

Tinctures, Treats, Capsules, & Topicals

There is a growing tide of customers interested in the qualities CBD offers to their pets, especially with regard to joint pain, anxiety, and seizure relief. Pet owners claiming their pets’ conditions were untreatable with traditional medications – or that these medications caused more negative side effects than their positive outcomes were worth – have turned to their local pet stores, online platforms or even natural food stores for solutions, which has led them to CBD. This phenomenon results from consumers generally being forced to determine on their own when, how and if their pets are good candidates for CBD products, as veterinarians – for good reason – are hesitant to discuss CBD if clients do not broach the topic themselves.

As of July 2020, the ability of veterinarians to discuss and prescribe CBD for animals resides in a legal gray area, with a lack of regulations at both the state and federal level. Only California has passed legislation that specifically authorizes veterinarians to discuss cannabis (including CBD) with their clients, but still does not allow for the ability to prescribe CBD. California Assembly Bill 2215 prohibits the California Veterinary Medical Board (VMB) “from disciplining, or denying, revoking, or suspending the license of, a licensed veterinarian solely for discussing the use of cannabis on an animal for medicinal purposes, absent negligence or incompetence”. The bill also states that “A licensee shall not dispense or administer cannabis or cannabis products to an animal patient.” The California VMB published guidelines for veterinarian discussion of cannabis within the veterinarian-client-patient relationship effective January 1, 2020. Furthermore, there is very limited clinical data available at this juncture, so even vets that are permitted to discuss CBD do not have a strong foundation from which to do so.

Despite its grassroots marketing-based growth, the CBD pet market is truly taking off, growing to \$426 million in sales in 2020. By 2025, with the development of significantly more clinical data and clear and explicit policy allowing vets to both discuss and recommend CBD products as appropriate, pet CBD is expected to make up a \$1.1 billion market. This vast growth will be bolstered by the expansion of mass pet retail chains and the entry of mass merchandisers (e.g., Target, Walmart) into the market as well as the potential medium-term participation of pet product manufacturers like Mars (Pedigree, Eukanuba,

Whiskas, Iams) and Nestle (Purina). National pet chains Petco and PetSmart, along with specialty pet chain, Bentley's Pet Stuff began to sell CBD products in 2020.

Today, the majority of CBD-infused pet products are designed with dogs in mind, but with time there have been an increasing number of products developed for the broader pet kingdom, such as cats, birds and horses. Currently, there are tinctures, treats, capsules, topicals, patches and sprays on the market, ranging from about \$20 for treat packets to \$200 for the pricier high-dosage or high-volume tinctures. Though pet treats sell a great deal in terms of volume, given they are generally easier to administer and less expensive, tinctures make up the largest share of the pet CBD market, given their price points and ubiquity among retailers of pet CBD products. Among US pet stores contacted by Brightfield Group in 2019, all of those carrying CBD had tincture products available, 80% offered treats or other edibles, while less than half carried topicals or capsules.

Regulatory Environment

The hemp-derived CBD regulatory environment is notoriously difficult to navigate in the United States, primarily due to the following factors:

- **Terminology | Legislation** covers three categories that are sometimes treated distinctly, and sometimes synonymously: hemp, CBD and cannabis. This leads to confusion and conflation of the three, as well as inconsistencies when it comes to regulation. There is also a great deal of mislabeling, misunderstanding and misinformation shared among consumers and investors regarding the difference between hemp oil, hemp-derived CBD, full-spectrum (or broad spectrum) hemp extract, marijuana-derived CBD, synthetic CBD, and marijuana.
- **Legal Status | Laws** surrounding hemp - and specifically hemp-derived CBD - are (at times intentionally) vague and have changed frequently over the years. Federal policy toward hemp has been debated over extensively among government agencies, the hemp industry, and the court, though the 2018 Farm Bill provided some much-needed clarity at the national level. States continue to establish their own regulatory frameworks (overseen by the USDA) and have taken widely varying approaches to in-state regulation.

Terminology

What is hemp-derived CBD, and is it different from hemp oil?

The term “hemp oil” has come to be used ambiguously, in many cases referring to hemp-derived CBD oil, but most often referring to hemp seed oil, which is derived from hemp seeds and stalks and typically serves as a nutritional or protein supplement. Hemp seed oil does not contain CBD or have the same healing properties associated with concentrated hemp-derived CBD oil. Another term often used is full-spectrum hemp extract, which refers to the pure oil extracted from hemp, containing various cannabinoids and natural compounds found in the original hemp plant.

The unclear terminology surrounding hemp and the resulting confusion among customers have worked to the advantage of some manufacturers and retailers, and to the disadvantage of others. By way of example, a quick search on Amazon yields nearly 100 results for “Full Spectrum Hemp”, which includes both “hemp extract” products (many of which contain CBD content but do not advertise this in order to avoid further scrutiny) and products marketed by companies producing much cheaper hemp seed oil and implying it has the properties attributed to CBD, thus fetching a higher price by preying on the lack of broader consumer education on hemp extracts.

Legal Status

The legal and regulatory landscape surrounding CBD is complex and evolving quickly – witnessing a range of tremendous successes and challenging setbacks over the course of mere months.

Previously, the hemp industry operated under Section 7606 of the 2014 Farm Bill, which defined industrial hemp as distinct from marijuana and allowed for a limited amount of hemp cultivation (for research or pilot programs) in states that authorized it. The industry's biggest adversary during that time was the U.S. Drug Enforcement Administration (DEA), which undermined the hemp industry by contending that "Section 7606 did not remove industrial hemp from the controlled substances list", and was quite successful in derailing any larger efforts to cultivate, process or sell hemp-derived CBD in the United States.

Then, in a groundbreaking decision in June of 2018, the U.S. Food and Drug Administration (FDA) approved the first pharmaceutical drug comprised of plant-derived (rather than synthetic) CBD – Epidiolex, which is used to treat rare, severe forms of epilepsy.

The FDA decision to sign off on Epidiolex prompted a September 2018 re-scheduling by the DEA, shifting this medication from Schedule I into the much less regulated Schedule V category and marking the first time the DEA formally recognized any cannabis plant derivatives' medicinal value, but the re-classification was extremely limited in scope.

In December of 2018, the Hemp Farming Act – housed within the U.S. Farm Bill and supported by both sides of the aisle – was signed into law. The policy shift had tremendous implications for the industry, requiring that hemp and its extracts containing <0.3% THC content be permanently removed from the Controlled Substances Act – taking them out of the purview of the DEA entirely, and in essence, legally transforming hemp from a felony substance into an agricultural commodity. Under the Act, states were given the responsibility of developing their own regulatory frameworks, as overseen by the U.S. Department of Agriculture (USDA) - which must approve or reject plans within 60 days of submission.

Days after the Farm Bill's passing, matters were complicated when the FDA asserted its authority over the regulation of CBD-infused products - specifically those used as food additives and supplements – under the Food, Drug and Cosmetic Act (FD&C). It declared that it is "unlawful under the FD&C Act to introduce food containing ... CBD into interstate commerce, or to market CBD products as, or in, dietary supplements" because "[CBD is an] active ingredient in FDA-approved drug [Epidiolex] and ... was the subject of substantial clinical investigations before [being] marketed as a food or dietary supplement."

What Did the Farm Bill Actually Change?

The Farm Bill removed the most important legal barriers that had historically hampered the industry's growth. Though cultivators, manufacturers, and retailers remain subject to state laws and FDA (and other federal agency) oversight and some legal and regulatory ambiguity remains, CBD businesses no longer face many of the inconsistently enforced obstacles previously seen in the industry:

- Cannabis businesses have always been subject to state and federal taxation, but legal CBD businesses now have the ability to take deductions – a significant financial boon.
- These businesses now have greater (though still limited by the banks themselves) access to federally insured banks and financing, and in some cases, public resources (e.g. water) that were previously strictly controlled are now available to them.
- Hemp farmers are now protected under the Federal Crop Insurance Act, an absolute necessity to the sustained success of farming operations in any industry.

In short, the passage of the hemp-legalizing Farm Bill provided protection and confidence to legitimate industry players formerly sidelined by vague federal laws forcing them to compete against gray and black-market actors. It gave these businesses access to a variety of formal market protections that were previously unavailable. It has also paved the way for consumers to purchase CBD products without concerns about its legality, and once a solid regulatory framework and safety standards are in place, quality assurance and product content concerns will be assuaged as well. Though there is progress still to be made at the federal and local levels, and clear policies may take some time to establish, top-to-bottom governmental approval – which began with the significant and unprecedented passing of the 2018 Farm Bill - will be extremely important in allowing the hemp industry to become normalized and sustainable over the long term.

Federal Policy Now and In the Future

At this juncture, federal government agencies and Congress have several potential courses of action available to them, which will largely dictate how the U.S. CBD market will grow and evolve.

Status Quo

It is possible that the FDA will continue to regulate CBD as it does today, within the standard framework used for supplements whose ingredients have been tested and approved for use in pharmaceutical drugs prior to being sold on the mainstream market. This system permits only approved pharmaceuticals to be accessed by prescription, and expressly prohibits over-the-counter sales of the ingredient – in this case, CBD-infused

food additives and supplements (though policy remains vague regarding topicals, beauty and pet products).

This looks highly unlikely, however, as the agency is actively exploring alternatives, and has traditionally shown itself to be open to a pragmatic regulatory approach to CBD – as illustrated by its 2018 review and approval of CBD-based pharmaceutical Epidiolex, in which it concluded that CBD had negligible potential for abuse and could be removed from the Controlled Substances Act (CSA), despite the DEA being adamant that cannabis and its derivatives (including hemp CBD) remain controlled substances.

An FDA hearing held May 31st, 2019, was aimed at helping the agency collect more information from the public to inform its policymaking. It inquired specifically about how CBD affects different people and their various conditions, and the impacts of the different forms of consuming and ingesting products such as edibles, vaping, smoking, and topical application. The agency has not yet issued a formal deadline for outlining its intended course of action. However, in July 2019 they issued a statement, in which they acknowledged the public hearing and its findings. The Agency stated they will look into new scientific data, comments on safety, manufacturing, product quality, marketing, labeling, and sale of products and explore effectiveness of CBD further. They aim to bring regulatory clarity as soon as possible and will update the public and provide information based on science and data.

Congress is being lobbied to step in and expedite matters as well – particularly with regard to the FDA, and regulatory bodies – both at the state and federal level – are being influenced by the many powerful forces supporting hemp and its extracts. The biggest supporters of the Farm Bill's hemp provision, for example, were elected officials representing rural parts of the country (e.g. Mitch McConnell – Kentucky) who hope to see the hemp plant replace other cash crops for American farmers. These officials are well-aware that a great deal of the plant's value is derived from its CBD content and that for farmers to realize the economic benefits of hemp, the plant's extracts must be made effectively legal for more than niche medicinal purposes. These legislators will not be satisfied with hemp's being legalized by Congress only to be crippled by bureaucratic red tape.

Alternative Paths Forward

The President of the American Herbal Products Association, Michael McGuffin, outlined two alternative paths to market for CBD that the FDA could feasibly support in lieu of establishing a completely new policy framework:

- One would be for the agency to issue a statement clarifying that pure CBD isolates are illegal because the FDA has approved that as a drug, versus hemp leaf or flowers that would be considered legal.


- Another would be for the agency to communicate an explicit written policy of enforcement discretion when it comes to CBD-infused goods, essentially authorizing product sales conditional on strict compliance with all rules that generally apply to supplements, such as facility registration, cGMP provision, and serious adverse events reporting.

Another possibility, according to Attorney Jonathan Miller, representing the U.S. Hemp Roundtable, is that the Secretary of Health and Human Services could waive certain IND (Investigational New Drug) requirements on the FDA that preclude it from regulating CBD as a supplement.


However, Miller has indicated that the industry, Congress, and general public are supportive of thoughtful and effective regulation, thus it is unlikely the FDA or Congress will move forward without a framework in place covering basic health and safety concerns regarding the cannabinoid and its uses – which the above do not adequately address. Per Miller, any regulatory policy put forth is likely to establish a framework for dosage (establishing a threshold distinguishing pharmaceutical drugs from dietary supplements), testing requirements (at a minimum, THC and heavy metal content), and labeling (age warnings, alerts to pregnant women), though the scope may be broader. The FDA has stated that developing this type of framework typically takes two to three years. A great deal of clinical trial evidence has already been submitted to the FDA, which may enable the agency to act more rapidly than it typically would.

In the meantime, Congress is being lobbied by several parties to step in and move the process along more quickly. While Congress could theoretically pass legislation overriding the FDA's decision and permitting CBD ingestible sales, for the reasons listed above, a much more probable scenario is that Congress will nudge (via fixed deadlines, funding cuts, etc.) the FDA to expedite its typical timeline and get a policy framework in place by mid-2021, allowing hemp CBD manufacturers and retailers alike to operate in full legal compliance and without fear of repercussions from federal agencies. Brightfield Group's market forecasts are based on the assumption that this will be the case.

Recent Developments from the FDA and USDA

Regulations regarding hemp cultivation and CBD are evolving day-to-day with several states moving to clarify their legal frameworks following the passage of the 2018 Farm Bill, and several federal agencies revising or announcing policies to clarify their stances on hemp cultivation and CBD. This demonstrates an incremental but important push toward a less ambiguous regulatory framework, as well as a general nationwide acceptance that hemp and CBD is in the market to stay. 

FDA Sends Report *on Cannabis and Cannabis-Derived Compounds to the OMB (May 2020)*

On May 28, 2020, the White House Office of Management and Budget began reviewing an FDA draft of a federal plan for cannabis and CBD research titled "Cannabis and Cannabis-Derived Compounds: Quality Considerations for Clinical Research". Although the contents of the document are not shared, it was indicated that it is related to FDA's ongoing efforts to regulate CBD products. The OMB completed its review of the document on July 2. 

FDA Update on Efforts Related to Cannabidiol Products (March 2020)

On March 5, 2020 the FDA provided an update on their efforts related to cannabidiol products, including the steps they are taking in areas of education, research, and enforcement to provide market clarity. In terms of education, the FDA emphasized that they will continue to expand their educational efforts, will continue to update their online resources for consumers, researchers and industry, and maintain their communication with Congress, industry, researchers and their regulatory partners to share and collect information. In order to understand the research aspect, the FDA stated that they are seeking reliable, high-quality data regarding the effects, long-term impacts, pharmacokinetics, safety, administration types, processes, and use in pets. One of the ways they are exploring to obtain this data is by encouraging, facilitating and initiating more research on CBD, providing opportunities for industry and researchers to collaborate with their federal partners.

The FDA also re-opened the public docket to submit scientific data. The FDA's National Center for Toxicological Research will conduct a study to understand the effects of CBD exposure during pregnancy. In addition to this, they initiated a research study in partnership with the University of Mississippi to evaluate the levels of CBD and THC in a sample of cosmetic products to assess sensitization of THC and CBD topically, and dermal penetration. Lastly, the FDA states they will continue to monitor the marketplace and take appropriate action against unlawful CBD products that pose a risk of harm to the public, referring to products that are being marketed with claims of therapeutic benefits, or other drug claims, without having gone through the drug approval process; products that may have risky contaminants or potentially harmful substances; products marketed with false claims or statements regarding ingredients, and amount of CBD. With these steps the FDA committed to work efficiently to further clarify their regulatory approach to CBD products.

USDA Drops DEA-Testing Requirement (February 2020)

The USDA announced interim rules for domestic hemp production on October 31, 2019. Rules were open for public comments, and according to Greg Ibach, undersecretary of the USDA, they received 4700 comments, many of them regarding the DEA testing requirement. At the National Association of State Departments of Agriculture (NASDA) meeting which took place in Virginia on February 26, 2020, he told NASDA members that

the USDA and the DEA have reached an agreement to remove the requirement for hemp farmers to have their crops tested in DEA-registered laboratories. This requirement was particularly an issue for farmers, as there are 47 laboratories currently registered with the DEA and many states don't have a registered laboratory. Testing and sampling requirements are among the aspects that the USDA can change, while some parts of rule can only be changed by the Congress. William Richmond, director of the USDA's Domestic Hemp Production program, said the USDA will open a public comment period in the fall, to gather industry input on the 2020 production season.

USDA Establishes the *US Domestic Hemp Production Plan (October 2019)*

On October 29, 2019, the US Secretary of Agriculture Sonny Perdue announced the establishment of an interim final rule for the US Domestic Hemp Production Program, which took effect on October 31, 2019. There was a 60-day public comment on the interim rule following the effective date and the interim rule will be in place for two years. The interim final rule provides states, tribal nations, and hemp cultivators guidance and creates a consistent regulatory framework on hemp production, including highly anticipated topics such as THC testing procedures.

The interim rule sets the standards for the hemp production plans regarding land used for production, procedures for testing THC levels, disposal of hemp plants that exceed maximum THC levels, compliance, and procedures for handling violations. The states and indigenous tribes must submit their hemp production plans to USDA and USDA will review the plans in 60 days. The interim rule also establishes a plan for locations where hemp cultivation is legal however is not regulated by official plans. According to interim rule, producers who wish to cultivate hemp under the USDA plan, must apply for a license from the USDA. USDA sets certain restrictions on who can apply. The producers are expected to renew their licenses in every three years. However, USDA will not issue licenses to individual producers who are in states or tribal nations with an approved hemp production plan.

THC sampling and testing procedures are key areas regulated in the interim rule. An official will collect samples and a DEA-registered laboratory will do testing. The results of the THC concentration of all hemp must meet the acceptable hemp THC level. The USDA is somewhat flexible in sampling and testing, stating that alternative methods will be considered if they are comparable and similarly reliable. With these new rules, USDA created a new term "acceptable hemp THC level" to ensure that there is a high degree of certainty that the THC concentration level is accurately measured and is above 0.3% on a dry weight basis before requiring disposal of the crop in order to save hemp cultivators from suffering economic losses. According to this new rule, laboratories will calculate and report the measurement of uncertainty as a part of any hemp test results. If it is tested 0.3%

or less, then the cannabis sample will be considered hemp for the purpose of compliance with the requirements of state, tribal, or USDA hemp. If a laboratory reports a result as 0.35% THC level with a measurement of uncertainty of +/- 0.06, the range is 0.29% to 0.41% THC. Since 0.3% is within that range, the sample and the lot it represents, is considered hemp for the purpose of compliance with the requirements of state, tribal, or USDA hemp plans.

With the end of the public comment period, some states announced that they will be sticking with their current rules for the 2020 growing season. Alabama, Alaska, Arkansas, Colorado, Connecticut, Hawaii, Illinois, Indiana, Kentucky, Maine, Maryland, Minnesota, Missouri, Nevada, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Oregon, Rhode Island, Utah, Vermont, Virginia, and Wisconsin decided to extend their 2014 pilot program rules into 2020 production season. By extending their current rules, these states are effectively withdrawing their requests for approval from the USDA for the 2020 season. New Hampshire decided against hosting a state hemp production program, making individual producers eligible to apply for production licenses under USDA's authority. So far, the USDA has approved 17 states: Delaware, Florida, Georgia, Iowa, Kansas, Louisiana, Massachusetts, Montana, Nebraska, New Jersey, Ohio, Pennsylvania, South Carolina, Texas, Washington, West Virginia, and Wyoming; 32 indigenous tribes; and the US Virgin Islands. The agency is currently reviewing two state plans and one indigenous tribes' plan and has sent Arizona and one indigenous tribe their plan back to revise and resubmit. The plans that are currently under review are: South Dakota, Tennessee and Puerto Rico. A detailed chart on States and Indigenous Tribes' status can be found [here](#).

USDA Clarifies Hemp Transport Legality (May 2019)

In May 2019, the US Department of Agriculture (USDA) issued a legal opinion clarifying that the interstate transport of hemp-derived products is protected under the 2018 Farm Bill. Per the USDA, state law is superseded by the Farm Bill, which removed hemp from the Controlled Substances Act in the United States. This is intended to prevent state law enforcement from blocking shipments or transport of legally produced hemp products across state lines, though states may still prohibit production and sales within their borders. The USDA also began accepting applications for intellectual property protection.

Recent Developments – Other Parties

CBD Brands Collaborate to Sponsor Observational Research Aimed to Answer FDA's Safety Concerns (June 2020)


On June 9, 2020 ValidCare announced that Boulder Botanical & Bioscience Labs, CBDistillery, CBD American Shaman, Charlotte's Web, Columbia Care, HempFusion and

Kannaway will participate in an industry-wide study measuring the effects on the liver from daily use of full-spectrum hemp derived CBD and CBD isolate. The study will collect evidence from healthy American adults who have consumed oral CBD products for at least 60 days. Product experiences and blood samples will be gathered to understand liver reaction to the products. The study is set to start in early Q3 2020 and is expected to be completed by the end of the year. It aims to provide the FDA science-based data and speed up the process for regulations that will provide clarity for the industry.

Citizen Petition Requesting FDA to Establish a Regulatory Pathway to Legally Market Dietary Supplement Containing Hemp-Derived CBD (June 2020)

The Council for Responsible Nutrition (CRN) submitted a [Citizen Petition](#) on June 16, 2020 to the FDA to "exercise its statutory authority to establish a regulation under which hemp-derived CBD may be legally marketed as a dietary ingredient; clarify when a hemp-derived substance is subject to the preclusion provisions of 21 U.S.C. § 321(ff)(3)(B); and enforce existing dietary supplement regulations with respect to CBD-containing products being marketed as dietary supplements." 21 U.S.C. § 321(ff)(3)(B) is a provision of the Federal Food, Drug and Cosmetic Act (FDCA) is known as the "exclusionary rule," that creates a general presumption against the lawful marketing of an ingredient in a supplement if it was first marketed as a drug or was first studied in substantive clinical investigations as a drug. The act allows the FDA to set rules so that hemp-derived CBD can be legally marketed as a dietary ingredient. The Council urges the FDA to act quickly and remove unsafe and illegal products and ingredients from the market and protect consumers and responsible companies in the space.

Lawsuits Challenging the Legal Status of CBD Products Stayed or Dismissed (May 2020)

Lawsuits challenging legal status of CBD products have been stayed or voluntarily dismissed in May 2020. Judges decided to apply the doctrine of primary jurisdiction, concluding as the relevant federal agency (the FDA) is currently assessing ingestible CBD products, it would not be wise to make local determinations. The courts decided to stay the cases until the FDA completes its rulemaking regarding the marketing and labeling of CBD ingestible products. These decisions are based on Congress' commitment of regulating CBD products, as well as the FDA expected guidance on the topic. 

US Hemp Roundtable Asserts Industry's Eligibility for USDA Coronavirus Food Assistance Program (CFAP) (May 2020)

The USDA announced in late May 2020 that hemp producers are not automatically eligible for the Coronavirus Food Assistance Program, establishing a comment docket for producers to argue their case of eligibility. The USDA did not include hemp as an eligible crop due to the lack of historic public market information, the department required a drop in market prices of 5% or more between mid-January to mid-April 2020 to become eligible for relief. The US Hemp Roundtable submitted their argument claiming hemp products experienced a significant value decline since the beginning of 2020 adding monthly data from independent sources. According to the data, hemp prices have fallen significantly more than 5% from January to April 2020. The organization urged for the USDA to supplement the commodities currently listed in the CFAP regulation by including hemp and issue another Notice of Funding Availability listing hemp as an eligible commodity for CFAP payments. USDA accepted comments on the rule until June 22, 2020 and stated they will announce any changes in eligible commodities for CFAP in the coming days. The organization also requested that lawmakers to require the FDA to start writing regulations for CBD products as dietary supplements and food additives and exempt CBD use from the drug review.

H.R. 5587 Introduced by House Agriculture Committee (January 2020)

On January 13, 2020, H.R. 5587 "To amend the Federal Food, Drug, and Cosmetic Act (FDCA) with respect to the regulation of hemp-derived cannabidiol and hemp-derived cannabidiol containing substances." was introduced to allow CBD and hemp-derived CBD containing substances to be included within the definition of permissible dietary supplements under the Dietary Supplement Health and Education Act of 1994. Additionally, it creates an exception for hemp-derived CBD to certain provision in the FDCA, that bar the introduction of a dietary or food ingredient if that substance is an active ingredient in an FDA approved drug or has been authorized for investigation by FDA as a new drug. It also requires the USDA to complete a study for farmers who are producing hemp under USDA's regulations regarding the market and regulatory barriers.

Consolidated Appropriations Act 2020 Becomes Public Law (December 2019)

The federal spending bill signed by the President on December 20, 2019 includes following provisions:

- \$16.5 million for USDA to implement hemp provisions in the 2018 Farm Bill.
- \$2 million for the research of hemp through Agriculture Research Service (ARS) sites.

- Support for competitive USDA grants for hemp projects.
- A measure encouraging the FDA to issue formal enforcement discretion guidance for CBD products.
- A provision directing the Farm Credit Administration to offer services to hemp producers and businesses.
- A prohibition on the federal government from banning the transfer, production or sale of hemp in accordance with the 2014 Farm Bill.
- A measure to support the DEA's efforts to deploy technology to enable law enforcement to distinguish between hemp and marijuana in the field

USPS Authorizes Mailing of Compliant Hemp

In June 2019, the US Postal Service issued a statement that hemp-based products, including cannabidiol (CBD) with less than 0.3% THC content may be legally mailed across state lines, so long as it complies with all applicable federal, state, and local laws (backed by up-to-date records)

TSA and Air Travel Regulations

In May 2019, the Transportation Security Administration (TSA) formally issued clarity on regulations surrounding CBD products and air travel, authorizing hemp-derived CBD products to be carried by passengers. This followed a period of confusion in the law due to state-by-state differences in enforcement.

USPTO - Trademark Authorization

In May 2019, the US Patent and Trademark Office (USPTO) announced that hemp products in compliance with the 2018 Farm Bill may now qualify for registered trademarks. This is a big step for an industry in which product differentiation and rights are high priority, and wherein issues of trademark theft have been rampant.

State-Level Policies

After the Farm Bill granted them the responsibility of developing their own regulatory frameworks regarding CBD, as overseen by the U.S. Department of Agriculture (USDA), many states made quick progress in doing so, allowing for or restricting hemp cultivation, processing and sales apart from or alongside cannabis regulations. Some generated entirely new policies (Indiana), some developed no official policy (Kentucky), some kept hemp

largely within the cannabis supply chain (Massachusetts), and some (California, Michigan) deferred the decision to the Food and Drug Administration. For this reason, much of the industry's success hinges on how the FDA decides to approach hemp CBD as a food additive, supplement, cosmetic, etc., and the policy and enforcement measures it takes moving forward. In the meantime, these discrepancies in state-level approach have led to a handful of cases of misinterpreted or mis-applied disciplinary measures – e.g. products pulled from shelves, confiscated, individuals arrested at Disney World – but various federal agency clarifications issued since the Farm Bill's passage have mitigated a great deal of confusion and made these instances even more rare.

However, the spectrum of varying regulatory, enforcement and even cultural approaches to hemp in each state have continued to present challenges to businesses attempting to operate and scale across the country – thus a number have maintained their position as gray market operators, but a great deal have transformed into or established compliant, legal CBD businesses well-positioned to thrive in this new, more promising environment. There remain black-market companies on the market today, which simply do not comply with local or national regulations surrounding hemp products, and in some cases market product with little to no CBD (some even containing dangerous substances such as lead), but these are slowly being phased out as it becomes easier to join the legal market and customers become better-informed and more demanding of quality control and testing.

The state-level regulatory approaches to cultivation, research and retail sales are detailed below.

Alabama

In May 2019, Senate Bill 225 was enrolled, rescheduling hemp-derived THC as a controlled substance. CBD derived from industrial hemp with a THC concentration of not more than 0.3% on a dry weight basis is legal to produce, sell, and possess in the state of Alabama. Local retailers are now offering CBD products in the state.

FDA-approved drugs containing CBD, namely Epidiolex, are legal for doctors to prescribe and will be regulated in the same way as other prescription drugs. All other sales, distribution and possession of CBD derived from marijuana or hemp with a THC concentration greater than 0.3% remain illegal.

Industrial hemp cultivation for research purposes is permitted, pursuant to the Alabama Industrial Hemp Research Act enacted in 2016. However, the Alabama Department of Agriculture and Industries (ADAI) was awaiting the release and review of the interim final rule by the USDA to open the application period. The USDA published the interim rules on October 31, 2019 and ever since accepting submissions from states. As growers must be licensed by the state of Alabama, the 2020 Hemp Program Registration period for growers,

processors/handlers, and universities is scheduled to start in October 2019. Alabama decided to operate under 2014 pilot.

Alaska

Alaska legalized recreational marijuana in 2014, and medical marijuana has been legal since 1998. CBD can be sold at both licensed adult-use dispensaries and retail stores outside the cannabis supply chain.

In April 2018, Governor Walker approved Senate Bill 6 which legalized industrial hemp cultivation statewide and removed industrial hemp from the definition of marijuana, as long as it contains less than 0.3% THC. An industrial hemp pilot program has been established under Alaska Department of Natural Resources, through the Division of Agriculture. The aim is to increase the knowledge of how industrial hemp production, cultivation and marketing can increase agricultural production in Alaska. Alaska decided to continue to operate under its 2014 pilot program. The state held a Facebook Live event on March 24, 2020 and introduced their new hemp regulations that went into effect on April 4, 2020. According to these new regulations, properly registered Alaskans will have the ability to legally produce, process, and/or market products made from or with ingredients derived from a sanctioned industrial hemp program. The state is accepting grower, retailer, and processor registrations online through the Department of Natural Resources Division of Agriculture website. According to the regulations, the hemp products available at any retail location are subject to inspection, testing, and sampling during business hours. The regulation also set rules on sampling, testing, quarantines, and destruction of hemp and hemp products.

Arizona

Industrial hemp is allowed to be grown and processed for commercial and research purposes. Arizona is only permitting hemp cultivation through the state's agricultural pilot program which authorizes grower, harvester, transporter, processor and nursery licenses. Applications are available since May 2019. With the legalization of hemp cultivation, medical marijuana farmers have raised concerns about cross-pollination. The USDA is currently waiting on Arizona's state program re-submission.

Arizona Medical Marijuana Act also known as AMMA, passed in December 2010 and took effect in April 2011. Patients with listed conditions can purchase medical marijuana. Arizona Department of Health Services is the licensing and issuing authority of the Arizona Medical Marijuana Program.

CBD sales are only legal in Arizona through licensed cannabis dispensaries. However, THC dominant products can only be purchased by patients with qualifying conditions as recommended by a physician under the state's medical marijuana laws.

Arkansas

In 2017, the State of Arkansas passed the Arkansas Industrial Hemp Act, which established the industrial hemp research program and gave rights to the State Plant Board to license persons to grow industrial hemp. The Act also regulates the transportation of industrial hemp from the premises. Currently, Arkansas is continuing to operate under 2014 pilot.

The Arkansas Medical Marijuana Act, approved in November 2016, gave qualifying patients access to medical cannabis products with their medical marijuana card. Patients can access products, including CBD, through 32 state-approved dispensaries around the state. House Bill 1518 which was approved in March 2019, decriminalizes hemp-derived CBD and as a result hemp CBD is not regulated within Arkansas' medical marijuana laws. Currently, Arkansas laws do not specifically prohibit any form of CBD products, and CBD products are available in stores as well as online.

California

Hemp farming is legal in California, as the California Food and Agriculture Code Division 24 regulates cultivation of industrial hemp by registered growers and established agricultural research institutions and Senate Bill 1409, which was approved in 2018, legalizes commercial hemp cultivation. California is drafting a plan for USDA's review. The Department of Food and Agriculture proposed to adopt new sections to California Code of Regulations regarding time frames, procedures, methods and confirmation for industrial hemp planting, sampling, laboratory testing, harvest, and destruction for industrial hemp cultivation. The proposal aims to create a legal framework for testing and to prevent illegal cultivation and importation from other markets. The Department submitted the proposal to the Office of Administrative Law on April 28, 2020 and the written comment period closed on June 22, 2020. Unless there are substantial changes to the proposed regulations, the Department of Food and Agriculture may amend the proposal as set forth without further notice to the public.

While sales of food, beverages, supplements and cosmetics containing CBD are currently prohibited, CBD-infused topicals are in a legal gray area. Major chained retailers are now carrying or have announced their plans to carry hemp-derived CBD topical products such as creams, patches and sprays in the state. Sales of CBD-only ingestible products are permitted through dispensaries that operate in accordance with state's medical and recreational cannabis programs.

The California Department of Public Health issued a statement in July 2018, stating that “hemp-derived CBD oil and CBD products are not an approved food, food ingredient, food additive or dietary supplement and cannot be used in any human and animal food.” The same statement also clarified that seeds derived from industrial hemp, industrial hemp

seed oil, and hemp seed oil derived from industrial hemp will be allowed in food as long as there are not any claims for health benefits. California is in the process of passing Assembly Bill 228 regarding industrial hemp products in food, beverage and cosmetic products. With this pending regulation lawmakers in California seek to define industrial hemp and industrial hemp products and require warning labels for pregnant or nursing women as well as product testing standards for food, beverage, or cosmetic containing cannabidiol derived from industrial hemp. Section 3 of Assembly Bill 228 states the label of any package of a food, beverage, or cosmetic containing cannabidiol derived from industrial hemp shall include the following statement: “CANNABIDIOL USE WHILE PREGNANT OR BREASTFEEDING MAY BE HARMFUL. KEEP OUT OF REACH OF CHILDREN.” On August 30, 2019 California Senate Appropriations Committee failed to move the bill and held the bill on "Suspense" which means the bill is likely to wait until at least 2020 legislative season. As of June 2020, the Bill is still in committee and "held under submission," which indicates the committee wants to discuss the bill further but there is no motion for the bill to progress out of committee.

Colorado

Colorado has some of the nation’s most friendly laws toward both CBD and cannabis overall and is a leading state in hemp cultivation. In 2000, Colorado voters approved Amendment 20 to allow medical marijuana use. In 2012 Amendment 64 was passed which led to legalizing use of recreational marijuana use in 2014.

CBD is legal to produce, sell, and possess in Colorado and may be sold under the scope of the state’s cannabis laws. Hemp cultivation is permitted for research and commercial purposes and overseen by the Colorado Department of Agriculture. Colorado is one of the states that decided to continue operate under 2014 pilot program.

Colorado allows manufacture of foods with CBD. However, in 2018 Colorado enacted House Bill 18-1295 (“HB 18-1295”), codified in part in C.R.S. 25-5-426, which establishes that the manufacturing of an “industrial hemp” or “hemp product” must comply with Colorado’s Food and Drug Act. HB 18-1295 defines an “industrial hemp product” as “a finished product containing industrial hemp.”

Connecticut

In July 2015, Public Act 15-202 (Substitute House Bill No. 5780) legalized industrial hemp. As a result of this legalization, CBD products are legally sold in stores and online.

In 2019, Public Act 19-3 (Substitute Senate Bill No. 893), signed by the Governor authorized the Connecticut Department of Agriculture to implement a hemp research program. The Department was expected to submit a state plan as the USDA published the

interim rules on October 31, 2019. Connecticut's plan was received by the USDA but returned to the State for edits and amendments to ensure regulatory compliance and consistency. Connecticut decided to operate under the 2014 pilot as a result.

With the approval of House Bill 5389 in May 2012, Connecticut became the 17th state to approve medical marijuana. Patients with listed conditions are eligible to access cannabis products through state's medical cannabis channels.

Delaware

Senate Bill 266, signed into law in 2018, permitted the legal cultivation of industrial hemp for agricultural and academic research, overseen by the Delaware Department of Agriculture. The 2019 Hemp Research Pilot Program required the grower applicants to have an affiliation with an institute of higher education. The USDA approved Delaware state plan, and with this approval, Delaware assumes the primary regulatory responsibility for hemp production within its jurisdiction.

Qualifying patients may purchase cannabis and CBD for medicinal purposes through licensed dispensaries, as permitted through the Delaware Medical Marijuana Act, which was enacted in 2011.

CBD is currently being sold in retail stores in Delaware, but they are operating in a legal gray area since the state does not have a regulatory framework intact for CBD sales. CBD products considered to be legal based on House Bill 385 that was enacted in 2014. The bill legalized hemp CBD oil production and usage while giving the accredited institutions the right to cultivation.

Florida

Until mid-2019, hemp cultivation was permitted only for research purposes and had to be conducted by the University of Florida and FAMU per Senate Bill 1726, approved in 2017. However, the passage of Senate Bill 1020, enacted July 1, 2019, legalized and authorized the establishment of a regulatory structure surrounding the commercial cultivation, handling, processing, and sale of hemp and its extracts in the state. It is still illegal to grow hemp without a permit in Florida. The USDA approved Florida's state plan and applications for hemp cultivation, hemp extract for human consumption (retail, wholesale, distribute, manufacture, store or process), pet food (distributor), topicals, inhalable products licenses can be made online through Florida Department of Agriculture and Consumer Services website. Hemp CBD products are legally sold in retail stores. Formerly, CBD products could only be legally purchased in Florida from licensed cannabis dispensaries by patients diagnosed with a qualifying condition, pursuant to Amendment 2 - the Florida Medical Marijuana Legalization Initiative - approved by voters in 2018.

As of January 1st, 2020, Agriculture Commissioner Nikki Fried implemented new rules to regulate CBD products, regarding pesticide use, product labeling and the inspection of products produced or sold in the state. Retailers must pay \$650 fee to sell CBD products, and will be inspected to ensure compliance. Inspectors are checking what's on the shelf and the labeling of the products and giving a certain amount of time to become compliant if the requirements are not met.

Georgia

On May 10, 2019 with the approval of the Governor, Georgia became the 42nd state to legalize hemp farming. The Georgia Hemp Farming Act allows the production and sale of hemp and hemp products, however only growers licensed by the Georgia Department of Agriculture (GDA) are permitted to grow and process hemp in the state of Georgia. The GDA was working on regulations regarding hemp production and waiting for USDA's ruling on hemp production. On January 8th, 2020 GDA announced their revised industrial hemp plan and rules to comply with USDA's requirements. GDA also posted revised Hemp Growers and Processors Rules based on federal requirements and accepted written comments regarding the adoption of said rules until February 6, 2020. Since then, Georgia's hemp plan has been approved by the USDA and can be found [here](#). GDA began to accept online applications for Hemp Grower Licenses on March 23, 2020.

. CBD is an over-the-counter product and can be purchased without a prescription from retailers and online. Though the sale of hemp and hemp products are legal, GDA policy currently prohibits the use of CBD in food, pet food and dietary supplements. Until the Federal Food and Drug Administration (FDA) changes its restrictions on the inclusion of CBD oil in foods and dietary supplements, these remain unlawful in Georgia.

In 2015, the Governor passed House Bill 1, known as Haleigh's Hope Act, which allowed patients suffering from certain diseases to have access to medical cannabis oil. Patients can access cannabis oil that contained no more than 5% THC. The Bill authorized universities to research CBD oil to see its effects on seizure disorders in children. Patients need identification card showing their registration to state's Low THC Oil Registry. However, prior to April 2019, as the production, sale and shipment were still prohibited by law, patients were able to possess CBD oil, but they didn't have any options for buying it. In April 2019, Governor signed HB 324 into law, which legalizes the production and sale of cannabis oil for those with a valid doctor's recommendation.

Hawaii

Hawaii law prohibits adding any cannabis-derived substances to food, beverages or cosmetics for manufacture, distribution or sale, hence it is illegal to add cannabis-derived CBD to products under these categories or sell CBD as a dietary supplement. Hawaii's position on Hemp-CBD is one of the strictest in the nation as the sale of Hemp CBD

products such as foods, beverages, cosmetics, dietary supplements, unapproved drugs, or any other kind of Hemp CBD product that makes health claims, appears to be unlawful in Hawaii as it would constitute prohibited misbranding or false advertising.

Licensed medical cannabis dispensaries may legally produce and sell products containing THC and CBD, and medical cannabis cardholders are eligible to purchase products containing THC and CBD from these dispensaries.

The only legal way to cultivate hemp in Hawaii is under a license from the Hawaii State Department of Agriculture. Hemp cultivation is legal under the Industrial Hemp Pilot Research Program, which is based upon the 2014 Farm Bill and state law enacted in 2016. This means any cannabis growing in Hawaii outside of the state's industrial hemp pilot program, no matter how it tests, is legally marijuana. The pilot program only regulates the cultivation of industrial hemp however and does not regulate processing of industrial hemp or products made from or containing industrial hemp. The program started issuing licenses in June 2018. No plans are in place for the legalization and regulation of full-scale commercial hemp cultivation. Hawaii decided to continue to operate under its 2014 pilot program.

Idaho

Hemp farming is currently not legal in Idaho. Senate Bill 1345, which would allow Idaho farmers to raise industrial hemp and to allow it to be legally transported through the state, was killed by the House committee in March, 2020, leaving the state with no legal industrial hemp nor regulations that make a distinction between industrial hemp and marijuana. The Governor issued an order in November 2019 after conflicts arose over interstate transportation of hemp across Idaho. This executive order was intended to serve as a stopgap until the Idaho Legislature develops a permanent regulatory structure around hemp. It does not authorize or legalize the production of hemp, its byproducts, oils, or any other derivatives prohibited by Idaho law. It merely permits the interstate transportation of hemp consistent with the 2018 Farm Bill.

The Legislature with the consultation of the Governor and the director of the Idaho State Police and the Idaho State Department of Agriculture was expected to develop and submit a state plan to the Secretary of Agriculture by November 1, 2019 or immediately upon the date after which the USDA is ready to accept state plans, whichever is later, to allow for the research, cultivation, growing and production of industrial hemp in the 2020 growing season in Idaho to the greatest extent allowed under federal law. As of June 2020, state legislation is pending for further regulations regarding hemp production plans.

Illinois

As of October 2019, retailers can sell CBD products in Illinois if the products are derived from hemp and have less than 0.3% THC content.

In 2013, Public Act 98-0122 also known as the Compassionate Use of Medical Cannabis Pilot Program Act legalized medical cannabis in Illinois. Patients with qualifying conditions were given the right to have access to cannabis and CBD products at licensed cannabis dispensaries. In August 2019, changes to the program became effective, as the program became permanent and the "pilot" designation has been removed. While some provisions became effective immediately some require work of Illinois Department of Public Health.

Meanwhile, in June 2019 the Governor signed House Bill 1438 into law. . As of January 2020 adults 21 and older are able to purchase and possess cannabis products from licensed stores. The bill also allows home cultivation by medical cannabis patients with certain restrictions.

In 2018, Senate Bill 2298 was approved, amending the Cannabis Control Act and stating that cannabis does not include industrial hemp and legalizing the growing, cultivating, or processing industrial hemp or industrial hemp products if the person is licensed by the Department of Agriculture. The bill also enacts certain rules on testing and application processes and clarifies that the research purpose requirement shall not be construed to limit the commercial sale of industrial hemp. Illinois decided to continue to operate under its 2014 hemp pilot program.

Indiana

In March 2018, Senate Bill 52 was signed by the Governor legalizing low-THC hemp extract as a product so long that it contains less than 0.3% THC. CBD is legally protected for retail sales and possession in Indiana. The state requires QR codes on CBD product labeling. The law does not provide any clarification on the legality of manufacturing CBD in Indiana. Smokable hemp sales are not allowed.

Although during the 2019 and 2020 legislative sessions, multiple marijuana reforms were introduced, none of them moved forward. Hence medical and recreational marijuana are illegal in Indiana.

Senate Bill 516 was signed and passed in May 2019 authorizing hemp cultivation. However, there are still certain steps that needs to be taken, and the first crop for commercial production is expected to be in 2020. A license to grow hemp is required, and hemp must test below 0.3% THC. Indiana will continue to operate under the 2014 pilot.

Iowa

Hemp cultivation is permitted in the state. Iowa approved Senate File 599 during the 2019 legislative session and it was signed into law in May 2019, which aligned state law with the 2018 Farm Bill. The USDA published the interim rules on October 31, 2019 and has since been accepting submissions from states. Iowa's hemp cultivation plan was approved by the USDA, and the Iowa Department of Agriculture & Land Stewardship is allowing hemp growers to apply for licenses.

On June 17, 2020 House File 2581, was signed by Governor Kim Reynolds. This act relates to the regulation of hemp, including providing for testing methods and the regulation of hemp products, providing penalties, and making penalties applicable. The act prohibits possession, use and manufacturing, marketing, transportation, delivery and distribution of all smokable or inhalable hemp products. The act allows selling and consuming hemp-derived products that are manufactured in Iowa and comply with state packaging and labeling requirements. The act also allows for the importation of consumable hemp if the source's plan was approved by the USDA and has testing requirements "substantially similar" to Iowa's. Manufacturers and retailers must register for a license through the Department of Inspection and Appeals.

In 2017, the Medical Cannabidiol Act was signed, adding more qualifying conditions to be eligible for the State's program. Patients with qualifying conditions apply to receive their medical CBD card and are able to purchase the products from three dispensaries that are currently open across the state. Two dispensaries were permanently closed on March 30, 2020. The Department of Public Health stated they will work to license two new dispensaries as soon as possible. The State also restricts the forms and brands of medical CBD. The program does not allow raw leaf, flowers, edibles or any kind of product that mimics food. Products are produced by Iowa's two licensed manufacturers: Iowa Relief and MedPharm Iowa. Currently, patients can purchase tinctures, capsules, vaporizers and topical creams.

Kansas

In May 2018, Senate Bill 282 was enacted amending the definition of marijuana by exempting cannabidiol from the definition. The Act made both marijuana-derived and hemp-derived CBD products completely legal for medical and recreational use as long as they do not contain THC. CBD is legally sold in retail channels in Kansas.

House Bill 2244 and Senate Bill 28 was passed in May and became effective in July 2019, allowing use of CBD oil containing no more than 5% THC for certain medical conditions. Any patient suffering from a debilitating condition can speak to a physician who is licensed to practice medicine and surgery in Kansas and obtain a letter which must always be carried

while the products are in patients' possession. However, the Bill does not legalize cannabis cultivation or the production or sale of CBD oil, it only provides an affirmative defense in court.

In April 2018, the Kansas Governor signed the Alternative Crop Research Act (Senate Bill 263) which legalized hemp cultivation. The Act allows the Kansas Department of Agriculture (KDA) either alone or in coordination with a state institution of higher education, to grow and cultivate industrial hemp and promote the research and development of industrial hemp. The Bill also allows individuals to participate in the research program. Cultivation, growth, research, transportation, processing or distribution of industrial hemp or industrial hemp seed is only allowed with a license as part of the research program. Since then, the USDA approved Kansas' plan, and the State accepted applications for hemp production in 2020 until June 1st. Among other topics, the plan regulates THC tests that will be conducted by the Kansas Department of Agriculture labs.

Kentucky

In 2013, Senate Bill 50 was signed and made cultivation of industrial hemp legal for research. The Bill established the conditions and procedures for licensing of industrial hemp growers by the Department of Agriculture. According to the regulations no person can grow, handle, broker, or process industrial hemp in Kentucky without a license issued by the KDA. Individuals and businesses who would like to be considered for a license to grow, handle, process, or market hemp must submit the appropriate license application to KDA Hemp Program. Kentucky decided to continue to operate under the 2014 pilot.


Attempts to legalize medical marijuana are in the works however with the approval of House Bill 333 in 2017 the consumption and retail sale of CBD products are legal. The extract should contain 0.3% THC content and must be derived from industrial hemp. While the FDA has stated that CBD is not yet approved as a food or beverage additive, sales of CBD edibles are effectively taking place in the state today in several shops and boutiques. Sales of hemp cigarettes, cigars, whole hemp buds and ground flowers are illegal.

Louisiana

In June 2019, lawmakers approved House Bill 491 in order to recognize industrial hemp as an agricultural commodity and authorize the cultivation, processing and transportation of industrial hemp as legal. However, currently it is not legal to grow Industrial Hemp in Louisiana. The USDA published the interim rules on October 31, 2019 and accepting submissions from states. Under Louisiana's approved state plan, only Louisiana Department of Agriculture and Forestry approved licensed growers will be allowed to grow industrial hemp in Louisiana. Approved plan can be found [here](#).

With the pass of Senate Bill 143 in 2015, regulations became less restricted in terms of growth and distribution of medical marijuana and made it possible for people to have access to medical marijuana in Louisiana. In May 2016, Senate Bill 271 was approved an expanded the eligibility for medical marijuana treatment, listed the medical conditions and regulated the licensing of dispensaries. Nine licensed pharmacies were appointed by the Louisiana Board of Pharmacy, and they are allowed to provide cannabis products in any form except smokable or raw plant.

In 2019, Louisiana Board of Pharmacy and Office of Alcohol and Tobacco Control issued public notices suggesting CBD is illegal in Louisiana. The Board of Pharmacy warned pharmacies about the legality of CBD however told its licensees that they do not have any plans to take any action to back this claim. The state Office of Alcohol and Tobacco Control however told its permit holders that they will issue citations to those that sell CBD products. With all this confusion, Office of Alcohol and Tobacco Control issued a Declaration of Emergency in September 2019. The aim of this safety regulation was to properly regulate and license the retail sale of industrial-hemp derived CBD products for topical use and consumption.

Louisiana passed House Bill 843 in June 2020 and provided much needed guidance and regulations for industrial hemp and hemp-derived CBD. The Act prohibits processing and selling of any part of hemp for inhalation, any alcoholic beverage containing CBD, and any food or beverage containing CBD unless the FDA approves CBD as a food additive. It also regulates licensing requirements, testing and inspection rules for hemp crops and products, CBD product labeling rules, and hemp research and development while setting fines for violators of the new hemp regulations. The Commissioner of the Louisiana Office of Alcohol and Tobacco Control has the authority to license businesses to sell CBD products as well as to issue certain fines. 

Maine

Commercial hemp cultivation is legal in Maine pursuant to Title 7, Chapter 2231 which was enacted in 2015. Any person who desires to plant, grow, harvest, possess, process, sell and buy industrial hemp shall obtain a license from the commissioner. Maine will continue to operate under 2014 pilot.

In March 2019, Maine passed an Act (H.P. 459 – L.D. 630), declaring that food, food additives and food products containing hemp as not adulterated. The sale or distribution of such products may not be restricted or prohibited within the State based solely inclusion of hemp. Based on this Act, CBD may be sold at retail stores in Maine. Sales of edible products containing CBD are legal but are subject to conditions outlined by the law. These conditions include but are not limited to labeling, advertising, and sourcing. The state law bans

importation of ingestible products from out of state if they already contain CBD. Hence, ingestible products sold at retail in Maine must be produced in Maine.

Maine first passed medical marijuana laws in 1999, but the law did not create a way to purchase marijuana. In 2009, they expanded the number of diseases and created regulations on dispensaries and growers for the state. Maine also allows recreational use with certain restrictions.

Maryland

As of April 2019, with the enactment of House Bill 1123, industrial hemp cultivating, harvesting, processing, manufacturing, transporting, marketing, or selling became legal for agricultural research and commercial purposes. The Maryland Industrial Hemp Research Pilot Program requires farmers to partner with institutes of higher education. Although farmers can sell their crops, they can only grow the crops as a part of the research project. Maryland decided to continue to operate under 2014 pilot after the USDA announced its interim rules.

Medical Marijuana was legalized in 2014, with House Bill 881, patients with certain conditions can register to state's program. Medical cannabis is available in forms that can be vaporized (not smoked), or extracts, lotions, ointments, tinctures. During 2019 session, House Bill 17 was signed by the Governor allowing edible cannabis products as an option to patients as well. Recreational use is still illegal. Although there is no formal regulation of sales of CBD in retail establishments, major retailers have announced plans to carry CBD-infused topical products, such as creams and sprays. The Maryland Department of Health stated that "it is unlawful under the Food Drug and Cosmetic Act to introduce food containing added CBD or THC whether the substances are hemp-derived". The department refers to Maryland Health General § 21-256 and deems these products as adulterated hence unlawful. CBD can be legally sold at licensed medical cannabis dispensaries to patients with qualifying conditions.

Massachusetts

In July 2017, the Governor signed H. 3818, An Act to Ensure Safe Access to Marijuana, which created the distinction between marijuana, hemp and industrial hemp, allowing hemp to be grown commercially or as a part of the Agricultural Pilot Program. The Massachusetts Department of Agricultural Resources has the authority to oversee the cultivation and operates under an interim policy. The use, cultivation, and sale of hemp for commercial or research purposes requires registering with the state and is limited in nature. The state's hemp plan was approved by the USDA.

In June 2019, The Massachusetts Department of Agricultural Resources issued a Policy Statement on the sale of hemp-derived products; any food product; any product that makes therapeutic/medicinal claims; dietary supplement; animal feed; unprocessed or raw plant material that contains CBD are not approved for sale in Commonwealth. Besides these restrictions, CBD may be sold through licensed medical and recreational cannabis dispensaries throughout the state. Recreational marijuana retail stores opened in November 2018 after the law that legalized adult-use took effect in December 2016. Medical marijuana has been legal since November 2012.

In September 2019, the Governor declared a public health emergency and instructed immediate cessation of the sale of both cannabis and nicotine vaping products and devices. As a result, the legal age to buy vaping products was raised to 21, it is now against the law to vape at places where smoking traditional cigarettes are banned, and pharmacies are prohibited from selling vape products. Cannabis vaping products were left to the Cannabis Control Commissions' (CCC) authority. The CCC has since announced that Massachusetts cannabis retailers can resume selling these products. Under new regulations, retailers are required to disclose the additives that are used in THC vaping products and include a warning message.

Michigan

The Michigan Department of Agriculture oversees a hemp cultivation program strictly for research and development purposes. This was first legalized with Act 547 enrolled in 2014 and amended with Act 641 which took effect in January 2019. Under Act 641, anyone who grows industrial hemp or processes, handles, brokers, or markets industrial hemp in Michigan, must obtain a registration or license from Michigan Department of Agriculture & Rural Development (MDARD). Persons who obtain the appropriate registration or license will be able to grow, process, handle, broker, or market industrial hemp in conformance with Michigan law. However, because MDARD's industrial hemp program has not yet been approved by USDA, a registration or license issued under PA 641 is not sufficient for a grower or processor-handler to conform to federal law. In order to be in conformance with both state and federal law, participation in an Ag Pilot Program is required. After approval, Ag-Pilot Program participants are required to enter into a Research Agreement with MDARD. Licenses and research agreements expire annually on November 30 and participants in the Industrial Hemp Ag-Pilot Program will need to reapply annually. Persons who obtain both the required registration and/or license under Michigan's Industrial Hemp Research and Development Act and comply with the terms of a Research Agreement will be considered by MDARD to be conducting research on behalf of the Department as permitted under the 2014 Farm Bill. The USDA published the interim rules on October 31, 2019, and Michigan is currently drafting a plan for the USDA's review.

Michigan voters approved Proposal 1, and legalized recreational marijuana use as of December 2018. Medical marijuana use was first legalized in 2008, and adult-use sales officially began on December 1, 2019. As of April 2020, 95 licensed, active retailers are operating in the state.

CBD products are legally sold in retailers and marijuana dispensaries.

Minnesota

Previously, CBD was only legal for sale through licensed dispensaries to patients with qualifying conditions, pursuant to SF 2470, enacted in 2014. However, during the 2019 legislative session, the state approved the retail sale of hemp-derived products for human and animal consumption so long as the products are following the state labeling laws. The lack of regulations however, led the Minnesota Hemp Farmers and Manufacturer Association (MHFMA) to take things their own hand and test the products sold across Minneapolis. The results showed the necessity of guidance from the FDA regarding labeling and testing. A publicly funded lab in Minnesota began testing cannabis and CBD products to determine their THC content in early 2020. Officials believe that the testing will benefit the CBD industry as testing was needed to ensure that prosecutors are charging cases properly.

Hemp cultivation is legal for commercial and research purposes, pursuant to Minnesota statutes 18K.01-18K.09, signed into law in 2016. Minnesota will continue to operate under 2014 its pilot program.

Medical marijuana was legalized in 2014. Recreational marijuana is still illegal.

Mississippi

Mississippi laws and regulations do not allow the cultivation of hemp within the state. However, the Mississippi Legislature established a 13-member Mississippi Hemp Cultivation Task Force during the 2019 Regular Legislative Session to consider the potential of hemp cultivation, market potential, and potential job creation in Mississippi. The task force met in July and September in 2019. Mississippi is currently waiting for further state legislation to apply for the USDA's approval.

Harper Grace's Law (2014), House Bill 1231, authorizes University of Mississippi as the only entity to produce cannabis plants for cannabidiol research, and the University cultivates marijuana for research purposes. It also states that suffering from a debilitating epileptic condition or related illness and the use or possession of CBD oil under the order of a physician creates a complete defense against unlawful possession of marijuana. A new proposal is being promoted and will be decided through ballot measure in 2020. The proposal extends the debilitating medical conditions. With the enactment of this proposal,

Medical Marijuana Identification Card holders will be able to obtain medical marijuana from a medical marijuana treatment center. Recreational marijuana is not legal in Mississippi.

CBD products can be purchased from retailers or online. However, this is due to lack of regulation in the State, as the current legislation in Mississippi only legalizes CBD when the medical conditions of HB 1231 are met, whether it is derived from marijuana or from industrial hemp. State officials from the Mississippi Department of Public Safety, Bureau of Narcotics and the Department of Health issued a blanket warning in late-2019, stating their concern over the lack of federal oversight and insufficient scientific evidence of CBD products regardless of where and how consumers buy them.

Missouri

Senate Bill 133 was signed into law in June 2019, moving industrial hemp to commercialization. Before this amendment, it was regulated under the research pilot program pursuant to House Bill 2034 that was enacted in 2018. The State needs to revise the rules on industrial hemp research pilot program to reflect the changes that was made with SB 133. The proposed rules need to be filed after the bill goes in to effect on August 28, 2019. Industrial hemp may be grown by people who obtain valid permits from the Missouri Department of Agriculture. The Department began accepting applications for review in January 2020. Missouri decided to continue to operate under their 2014 pilot program. According to the Departments' timeline they are planning to make changes to Missouri Industrial Hemp Program by the end of 2020.

Hemp-derived CBD is legal in Missouri and available in retail stores. As the American Association of Feed Control Officials has not approved hemp, including CBD, as an ingredient for animal or pet foods, these products are not allowed. With the approval of Amendment 2, sale of medical marijuana to patients with qualifying conditions through licensed medical cannabis dispensaries went into effect in December 2018. The Missouri Department of Health and Senior Services started to receive applications in June 2019.

Montana

In 2011, Montana Senate Bill 261 legally categorized industrial hemp as an agricultural crop so long it contains less than 0.3% THC. In 2009 with SB 20, the Senate and House issued a joint resolution urging the Montana Congressional Delegation to introduce and promote federal legislation to eliminate the federal prohibition on domestic hemp production. Industrial hemp was authorized as an alternative agricultural crop by the Montana legislature with Section 80-18-101 through 80-18-111 of MCA and ARM 4.19.101-106, adopted on March 10, 2017. In 2017 under the Industrial Hemp Pilot Program, Montana farmers legally planted the first crop of industrial hemp in the State. An

industrial hemp license issued by the State Department of Agriculture is required prior to planting hemp seeds. Montana's state plan was approved by the USDA.

The Montana Department of Agriculture does not regulate the production or sale of food, drugs, health supplements, or cosmetics and they refer to FDA's stand on cannabis in these products. The State does not have any regulation on hemp-derived CBD products as a result of this vague and gray area; hemp-based CBD products can be found in retailers, vape shops and health centers in Montana. According to the Montana Department of Public Health and Human Services' statement on Industrial Hemp and Cannabidiol Policy for Foods, CBD products derived from cannabis plants and from industrial hemp will not be allowed in food. The statement encourages local health authorities to enforce actions when they encounter CBD products that are marketed as food and make any health-related claims. However, the statement also provides that if the CBD products are marketed only as botanical substances, not as food, and do not make any health or health-related claims, authorities should not pursue enforcement. Finally, the statement guides operators who want to manufacture CBD products in Montana to refer to the Montana Department of Agriculture to discuss options and legal status.

The Montana Medical Marijuana Act has gone through changes since it became law in 2004, most recent changes occurred as a result of Senate Bill 265. Use of recreational marijuana is illegal.

Nebraska

In 2014, with Legislative Bill 1001, industrial hemp cultivation by a post-secondary institution or the Department of Agriculture became legal for research purposes only. In 2019, Nebraska approved Legislative Bill 657, allowing for the establishment of a regulatory framework for commercial hemp cultivation in the state. The legislation gave Nebraska Department of Agriculture (NDA) the authority to regulate the growing, harvesting and processing of hemp for research purposes in Nebraska under a licensing agreement until further action is taken by the U.S. Department of Agriculture. To legally grow hemp in Nebraska, interested parties must receive a signed license agreement from NDA. Growing, handling and/or processing hemp without a signed license agreement from NDA is illegal in Nebraska. The USDA published the interim rules on October 31, 2019 and started accepting submissions from state. NDA submitted a state hemp plan and it was approved by the USDA,.

Marijuana use, both medical and recreational, is illegal in Nebraska. The state does not have a medical marijuana program.

Cannabidiol is still classified as marijuana under Nebraska laws and in 2017 the Attorney General stated it is illegal to possess, manufacture, distribute or dispense CBD in Nebraska. However, the federal re-classification of hemp has created confusion among local CBD shops and law enforcement. Although there have been several arrests, charges were dropped and there are retailers within the state that sell CBD oils.

Nevada

The Nevada Department of Agriculture (NDA), under the installment of Senate Bills 305 and 396, legalized industrial hemp research and pilot programs. Individuals who would like to participate by growing and handling hemp should complete an application and receive the approval of NDA. Upon the USDA announcement of its interim hemp cultivation rules, Nevada decided to continue to operate under its 2014 pilot program.

Hemp-derived CBD products are also available in dispensaries and in retailers. In June 2020, the Nevada Department of Health and Human Services published its draft rules and regulations regarding the sale of consumable hemp and CBD products. If these become law, the state will explicitly permit the sale of hemp-derived CBD as a dietary supplement, food additive and cosmetic. The proposal also suggests testing, manufacturing and labeling requirements.

Medical marijuana became legal in 2001, and the Nevada Medical Marijuana Program is regulated by Nevada Administrative Code 453A and Nevada Revised Statute 453A. Although it was not until 2015 for the state-certified dispensaries becoming operational. The patients with certain conditions can apply for the Nevada medical marijuana card which gives them access to legally purchase marijuana from certified dispensaries. In November 2016, with the passing of the Regulation and Taxation of Marijuana Act, purchase, possession, consumption of recreational marijuana by adults 21 and older became legal. State-licensed stores or dispensaries are the only legal way to purchase marijuana as all the other sources remain illegal. However, the adults who are 21 or older are allowed to grow marijuana plant at home for personal consumption, if there are not any state-licensed marijuana store within 25 miles of their home.

New Hampshire

Both hemp-derived and marijuana-derived CBD products can be found in Alternative Treatment Centers. Hemp-derived CBD products are also sold in food and wellness store, smoke and vape shops as New Hampshire does not have existing legislation refuting the Farm Bill.

House Bill 573 was signed in 2013, introducing use of marijuana for medical purposes. The state began issuing identification cards in late December 2015 and the first dispensary opened in May 2016. In September 2019, New Hampshire Department of Health and Human Services announced a public hearing to gather input on extending medical conditions for the therapeutic use of cannabis. Qualified patients can only purchase cannabis from one of the five Alternative Treatment Centers operating in the state. New Hampshire passed a House Bill in February 2020 regarding the adult-use of cannabis. As the Bill was passed with two-thirds majority, it is veto-proof as long as the Senate also

passes it by the same margin. The bill does not regulate adult-use cannabis sales, but allows possession and growing within certain limits.

Although it may seem as if hemp cultivation is legal under House Bill 421's provisions, which was signed into law and became effective in 2015, New Hampshire does not have a hemp program in the state. House Bill 459 signed by Governor in July 2019, defines hemp, allows the growth of hemp in New Hampshire, establishes a committee to study federal guidelines on growing industrial hemp and to determine labeling requirements for hemp products sold in New Hampshire. The Committee formed by this bill will determine whether to establish a state level oversight program for hemp within the department of agriculture, markets, and food or to request the federal government to oversee the hemp production in the state. The Committee was bounded to report their findings on or before November 2019. New Hampshire became the first state that decided against hosting a state hemp production program, making individual producers eligible to apply for production licenses under the USDA's authority.

New Jersey

Hemp-derived CBD products can be found in stores and are legal. Marijuana-derived CBD is only legal pursuant to the New Jersey Compassionate Use of Medical Marijuana Act and only sold in Alternative Treatment Centers. Medical marijuana became legal with the enactment of New Jersey Compassionate Use Medical Marijuana Act in 2010; it was amended in 2013 and again in July 2019. Recreational use is illegal.

In November 2018, Assembly Bill 1330 was approved, permitting the New Jersey Department of Agriculture to conduct a pilot program to research hemp cultivation. Assembly Bill 5322, New Jersey Hemp Farming Act was signed into law in August 2019 by the Governor. After the announcement of the USDA's interim hemp cultivation rules, New Jersey submitted its state plan, which was approved.

New Mexico

The Hemp Manufacturing Act, House Bill 581, was signed by the Governor in April 2019. This Act is regarding commerce, allowing and regulating production, testing, research, manufacturing, and transport of hemp, hemp extracts and hemp finished products. According to the statute, "hemp finished products produced by a hemp manufacturer holding a permit issued pursuant to this section shall not be deemed adulterated as that term is used in the Food Service Sanitation Act and the New Mexico Food Act." The new law legalizes the sale of cannabidiol and food products containing CBD.

Senate Bill 6 authorized the New Mexico Department of Agriculture to adopt rules for research on industrial hemp, providing for the establishment of the New Mexico Industrial

Hemp Research and Development Fund. The bill was originally vetoed by the Governor but was overturned by the Supreme Court of New Mexico in September 2017. New rules on hemp cultivation and manufacturing were announced by the Department of Agriculture on September 18, 2019. Following USDA's announcement of its interim hemp cultivation rules, New Mexico decided to continue to operate under its 2014 pilot program.

New Mexico approved its Medical Marijuana program in 2007 by enacting Senate Bill 523. Patients with qualifying conditions can apply for the program. The state also allows home cultivation with certain restrictions. Senate Bill 323 signed by the Governor in April 2019, decriminalizes cannabis. The new law reducing penalties for cannabis possession took effect in July 2019. However, this does not mean full legalization, as selling marijuana remains illegal.

New York

In 2014, New York passed Assembly Bill 9140 and authorized the growing of industrial hemp as a part of an agricultural program. In August 2016, the Governor signed Assembly Bill 9310 adding sale, distribution, transportation and processing of industrial hemp and products derived from hemp to the scope of the agricultural programs. Assembly Bill 7680 was signed into law by the Governor in December 2019. This bill is related to the growth of industrial hemp and the regulation of hemp extract and provides for the licensing of cannabinoid related hemp extract and the requirements for such licenses. The bill has effect on purchasing CBD products. The bill, while giving jurisdiction to local health departments, also opens a path to adding CBD to food and beverages. The bill sets up standards for plant growing and lab testing where the products could be certified. It also requires products to carry QR codes so that the consumers can verify the standards and see dosage information or any warnings.

The Bill took effect on May 1, 2020 and empowered the New York State Department of Health to create regulations for the industry. As of June 2020, the Department did not take any action to set regulations and indicated that the bill does not require licensing of cannabinoid hemp processors or retailers until January 1, 2021. The Department also stated that they are working together with Agriculture and Markets Departments to release a set of regulations regarding licensure, processing and retail sale of CBD products that will at least include provisions on labeling, testing and advertising. As a response to this delay, the New York Cannabis Growers and Processors Association sent a letter to state health regulators, urging them to provide the framework for the production and sale of hemp products.

No food or beverage product may be made or sold in New York State if it contains CBD as a food, a food additive, or an ingredient. Food or beverage products that are found by Department inspectors, in either a processing facility or in the marketplace, to contain CBD

are considered adulterated. These products are subject to enforcement actions taken by the Department or the US Food and Drug Administration.

The Compassionate Care Act, Assembly Bill 6357, signed into law in July 2014, legalizes the possession, manufacture, use, delivery, transport, or administration of medical marijuana by a designated caregiver for a certified medical use.

North Carolina

Following the Federal Agricultural Act of 2014, North Carolina passed Senate Bill 313 to recognize the importance and legitimacy of industrial hemp research. House Bill 992 in 2016, then set up the purposes and responsibilities of the industrial hemp research program. Growing hemp under state pilot programs is legal. On December 2019, the North Carolina Industrial Hemp Commission sent a letter to USDA and opting out of the USDA's hemp cultivation program and will continue to operate under the 2014 Farm Bill until its hemp provisions expire on October 31, 2020 or "until a viable pathway forward is available to satisfy federal and state requirements." The program clearly states that the state does not govern retail sales of CBD and refers to FDA's stand on sales of food, feed, supplements, drugs and cosmetics. The state also limits the scope of the hemp growing to three main reasons; fiber, grain and floral materials. North Carolina lawmakers have proposed banning the sale of smokable hemp products, in order to solve confusion of law enforcement officers when they try to identify hemp and marijuana products. However, in June 2020 the Senate passed the State's Farm Bill to the Governor by removing all proposed hemp regulation, keeping smokable hemp legal in 2021.

North Carolina does not have a medical marijuana policy, however, in 2014 the state signed a House Bill 1220, also known as North Carolina Compassionate Use Registration Act, into law. This Bill is regarding the use of hemp oil extract, that contains less than 0.3% THC, for people suffering from intractable epilepsy. House Bill 401, North Carolina Medical Cannabis Act, is currently in House and if signed into law will legalize medical marijuana use of patients with debilitating medical conditions.

North Dakota

The Fargo Police Department made an announcement in June 2019, referring to a memorandum by the Cass County State's Attorney's Office, clarifying the status of cannabidiol products. According to the announcement, possession of CBD products is legal in North Dakota if the CBD extracts are from a legally produced hemp, containing less than 0.3% THC.

North Dakota redefined industrial hemp in 2015 with House Bill 1436, allowing for the cultivation of the plant under an authorized pilot program or for agricultural research on

planting, cultivating, or marketing industrial hemp. The program was further regulated with the approval of House Bill 1349 in March 2019, as certain amendments were made to regulations of industrial hemp, providing penalties and continuing appropriation. North Dakota Department of Agriculture announced on their website that as USDA will not be announcing their regulations for growing hemp until 2020 growing season, they will operate under 2014 farm bill for the 2019 growing season. As the USDA published the interim rules on October 31, 2019 and started accepting submissions from states, North Dakota has decided to continue under the 2014 pilot.

In November 2016, with the approval of North Dakota voters, the North Dakota Medical Marijuana Legalization Initiative, Initiated Statutory Measure 5, was approved. However due to how the law was written it took a while for the program to set off and additional bills to expand the scope of the qualified conditions, make it easier for doctors to certify patients, and increase the amount of plants for manufacturing facilities. The first medical marijuana dispensary opened for business in February 2019. The program is now available for qualifying patients and more dispensaries are anticipated to open. There are initiatives to legalize recreational marijuana in the 2020 ballot.

Ohio

With the approval of Senate Bill 57 on July 30, 2019, hemp is now a legal crop for Ohio farmers to cultivate and process, and CBD products that are inspected properly are also legal. The bill also allows universities to cultivate and process hemp and establishes a hemp marketing program. Ohio Department of Agriculture was aiming to have a hemp program up and running for cultivators and processors in Ohio by spring of 2020. Ohio was among the first states in the country to have the USDA approval. Since then Ohio farmers began to apply for three year permits to start growing hemp.

Ohio legalized medical cannabis in June 2016 however due to lack of regulations, the program started in January 2019. Initiatives are pushing to include full legalization in the ballot in 2020 elections.

Oklahoma

CBD products are available for purchase both in store and online in Oklahoma. Oklahoma State Department of Health, states that CBD can be added to food in licensed food establishments.

House Bill 2913 was signed into law in April 2018, creating the Oklahoma Industrial Hemp Agricultural Pilot Program and allowing universities and farmers contracting with universities to cultivate certified hemp seed for research and development for industrial use. Hemp can be produced for paper products, fiber, molded plastics, CBD oil, livestock bedding, construction and seed. In 2018, Oklahoma Department of Agriculture, Food and

Forestry licensed 28 growers. With the announcement of the USDA's interim hemp rules, the State decided to continue to operate under its 2014 pilot program.

In June 2018, with the approval of Oklahoma State Question 788, the Medical Marijuana Legalization Initiative, marijuana was legalized for medical purposes. The state is unique in terms of patient selection for the program, as the legislation did not list qualifying conditions but instead left the decision up to Oklahoma board certified physicians.

Oregon

Although Oregon passed Senate Bill 676 in 2009 permitting production and possession of industrial hemp, they did not implement an actual hemp program. House Bill 4060, enacted in 2016, updated and clarified provisions related to regulation of industrial hemp. The Bill authorized State Department of Agriculture to regulate industrial hemp. The Bill also requires any industrial hemp commodity or product that is intended for human consumption to be tested in accordance with the rules of Oregon Health Authority, ensuring the crops do not contain more than 0.3% THC. After the USDA's interim rules, Oregon submitted its plan, but the USDA returned the plan for edits or amendments to ensure regulatory compliance and consistency. Oregon decided to continue under the 2014 pilot program.

Voters in Oregon approved the Oregon Medical Marijuana Act, also known as Measure 67, in November 1998. As of July 2015, recreational marijuana use became legal in Oregon. CBD products are legal in the State as well.

As of January 1st, 2020, the production or sale of CBD-infused alcohol is no longer allowed per the Oregon Liquor Control Commission's (OLCC) new policy. This policy came after OLCC decided to use federal caution to guide its policies as FDA announced not enough data is available on CBD. However, a clarification was made on adding CBD to beverages. The OLCC is encouraging to take caution on what goes into the products, and although the ban does not include cocktails mixed with CBD just yet, the OLCC stated that they will eventually ban those as well. Other products that are CBD-infused such as water, dog food and chocolates fall under the jurisdiction of Oregon Department of Agriculture hence are still available for sale.

Pennsylvania

CBD products can be purchased from licensed dispensaries as well as vitamin and health stores, convenience stores, pharmacies, and vape shops.

With the approval of Act 92 in July 2016, industrial hemp may be grown or cultivated in Pennsylvania by individuals with a valid permit from the Pennsylvania Department of

Agriculture. The Department also permits growth of hemp for the purpose of producing CBD. State's plan is approved by the USDA and can be found [here](#).

Medical marijuana was legalized in April 2016 and in February 2018 medical marijuana became available at dispensaries throughout the State. With House Bill 1899, an amendment is being presented to the House suggesting changes in adult use of cannabis, proposing to legalize it. As of September 30, 2019, the Bill was referred to Health Judiciary.

Rhode Island

Rhode Island permitted the growth of hemp by licensed individuals in July 2016 with the enactment of House Bill 8232. The Department of Business Regulation oversees licensing and regulating industrial hemp growers and handlers. The Department filed regulations about the Industrial Hemp Agriculture Pilot Program that went into effect in October 2018. The Department requires a seed to sale tracking system; a unique identifier tag will be added to the products to track hemp through each stage of growth and production. Products containing hemp or hemp-derived substances that are intended for consumption must be produced and distributed in consistent with state and local processing and safety regulations. The Department also sets rules on packaging and labeling.

In addition to their authority on hemp cultivation, the Department of Business Regulation is also in charge of medical marijuana cultivation, and as of January 1, 2017 they also license and regulate Rhode Island's compassion centers. Rhode Island passed the Edward O. Hawkins and Thomas C. Slater Medical Marijuana Act in 2006 however the act did not clarify legal methods to purchase marijuana. The law was amended in 2016 and took effect in January 2017, creating legal methods for patients with debilitating medical conditions to purchase marijuana from compassion centers. CBD products can be purchased from compassion centers as well as retailers, supermarkets and liquor stores.

South Carolina

Although state legislation creates confusion among retailers and consumers, retailers and convenience stores in the state sell CBD products such as tinctures, gummies, and topicals. There were cases of confiscations of smokable hemp during summer of 2019 after an opinion was issued from the Attorney General's Office regarding raw hemp in July 2019. However, news on production and sale of smokable hemp to convenience stores are circulating. South Carolina agriculture officials also stated that they will follow FDA guidelines on food and feed products that contain CBD. Pet treats and animal food containing CBD are still not allowed under federal law, and are not permitted in the state along with human food products. South Carolina passed Act 216 in June 2014, declaring that growing industrial hemp is lawful in the state and excluding it from the definition of marijuana. In 2017, the State enacted Act 37, creating the South Carolina Industrial Hemp

Program, allowing higher education institutions to conduct research. The state began licensing hemp farmers in 2018 for the first time. In March 2019, the Governor signed into law a bill that expanded the state's hemp farming program. House Bill H3449, Act 14, permits people to cultivate, handle, or process hemp if they are eligible and receive approval from the South Carolina Department of Agriculture. The State submitted its hemp plan to the USDA, which was approved.

Julian's Law took effect in June 2014, allowing cannabidiol use, which contains no more than 0.9% THC, in certain forms of epilepsy. The law is very restrictive regarding qualifying patients and vague on cultivation and dispensing of medical cannabis. There were attempts to pass bills on medical marijuana however they were all rejected by lawmakers.

South Dakota

In March 2017, with the approval of the Governor, Senate Bill 95 clarified CBD's status by excluding it from the definition of marijuana. Medical CBD products, as long as they are approved by FDA are legal, making the state's stand unclear for non-medical CBD products. South Dakota does not have a medical cannabis program.

With one of the most restrictive cannabis laws in the nation, hemp farming was not legal in South Dakota until recently. After vetoing hemp legislation in 2019, the Governor agreed to legalize hemp production for the 2020 season and enacted House Bill 1008 in March 2020. The South Dakota State Department of Agriculture submitted its finalized plans to the USDA in mid-June 2020 and is currently waiting for approval. The USDA's approval is needed for South Dakota farmers to produce hemp legally while hemp processors can work on getting their permits and equipment to be ready for processing hemp in fall 2020 in the meantime.

Tennessee

In 2018, officials raided stores that are selling CBD however dropped the charges since it was not clear whether the products were hemp or marijuana derived. As the state does not regulate CBD products, there is no testing or labeling requirements which creates a gray area in terms of safety. Lawsuits filed by Tennessee CBD retailers against local authorities for closing their legal stores in 2018 is moving forward after a ruling made in May 2020.

House Bill 2445, which took in effect in July 2014, legalized the production, possession, sale and research of industrial hemp. The Department of Agriculture was given the authority to regulate the system. A hemp grower license is required to grow hemp; the Department does not issue licenses for the sale of processed hemp products. A processor license is not required however, if the product is for human consumption. In that case, the processor

needs to obtain a food manufacturing facility license. The legislature enacted House Bill 1164, modifying the industrial hemp provisions allowing the production of hemp with 0.3% THC or less. The state's plan is under review.

Tennessee does not have a medical marijuana program and the lawmakers delayed the efforts to legalize medical marijuana until 2020. In 2015 with Senate Bill 280, the state authorized use of cannabidiol oil with less than 0.9% THC to treat intractable seizures or epilepsy in certain circumstances. By enacting 2144 in May 2016, state allowed patients to possess CBD oils with no more than 0.9% THC, including seeds, resins and oils, if used by a four-year institution of higher education as a part of a certain clinical research studies.

Texas

Texas passed House Bill 1325 in July 2019, regarding the production, manufacture, retail sale, inspection and regulation of hemp. Consumable hemp products which contain CBD, as well as edible parts of the plant are also in scope of the bill. The bill authorizes the Department of Agriculture to develop a state plan to monitor and regulate the production of hemp. The USDA published the interim rules on October 31, 2019 and The Department of Agriculture's plan has been approved. The plan can be found [here](#).

Department of Agriculture states the regulations regarding CBD consumables will be handled in accordance with FDA guidelines, and it will be monitored by Texas Department of State Health Services (DSHS). DSHS will establish its own programs on manufacturing and selling consumable hemp products containing CBD after USDA approves Texas Department of Agriculture's plan. However, House Bill 1325, allows existing retailers to possess, transport, or sell consumable hemp products that become a part of the retailers' inventory prior to the effective date of DSHS rules resulting from HB 1325. The retailers need to register with DSHS and sell products that follow certain restrictions.

As Texas' plan is approved by the USDA, DSHS is required to establish a manufacturing licensure program for consumable hemp products, create a registration process for retailers selling consumable hemp products containing CBD, and work with DPS on random testing for consumable hemp products containing CBD sold at retail. Random testing will start after the retail registration process is established. DSHS will begin issuing licenses and accepting registrations after it adopts rules consistent with the Department of Agriculture's hemp plan. DSHS has oversight over food, drug, cosmetics and dietary supplement manufacturers, distributors and retailers. Local jurisdiction may also regulate retail sales of these products but may not prohibit the sale of consumable hemp products. DSHS does not regulate an individual's private possession or use of these products. The Department of State Health Services published proposal rules for edible hemp production and sales in May 2020. The proposed rules suggest licensing for manufacturers, processors, and distributors. It also suggests registration fees for retailers to sell CBD. Testing and

labeling requirements, such as QR codes and manufacturer information, are also proposed. The final rules are expected to take effect in July 2020.

Texas enacted the Compassionate Use Act, Senate Bill 339, in 2015 allowing physicians to treat epilepsy by prescribing low-THC cannabis, 0.5% THC, to patients. House Bill 3703 and its implementations allows patients with epilepsy, a seizure disorder, multiple sclerosis, spasticity, amyotrophic lateral sclerosis, autism, and terminal cancer to be in the scope of the program. Patients can purchase low-THC cannabis products from licensed dispensing organizations. Smoking is specifically excluded from the definition of medical use.

Utah

Utah allows the sales and use of CBD products. The Agricultural Improvement Act of 2018 eliminated industrial hemp from the federal list of controlled substances as long as it contains less than 0.3% THC. CBD products can be purchased from grocery stores, health and wellness shops, vape and head shops, and legal dispensaries as well as online channels. Marijuana-derived CBD products on the other hand can only be used by medical marijuana card holders (patients with a qualified medical condition) pursuant to the Utah Medical Cannabis Act which was signed in December 2018. By March 2020, patients with medical conditions that are not listed in the law may petition the Compassionate Use Board for a medical cannabis card, and the eligibility will be determined on a case-by-case basis.

State law allows for individuals and universities to grow industrial hemp, provided they are licensed by the Department of Agriculture. The Department is currently working on establishing the rules for licensure. Once the rules are in place, an individual may apply for a license, and if all requirements are met, the Department may issue a license. There are certain requirements during the application process for; growers, processors and products. Utah decided to continue to operate under its 2014 pilot program after USDA's announcement of its interim rules.

Vermont

Vermont Agriculture Code, title 6, Chapter 34 regulates commercial hemp production, and authorizes Secretary of Agriculture, Food and Markets to oversee the process. The Vermont Hemp Program was established to research the growth, cultivation and marketing of hemp, and registration is needed for said activities. Meanwhile, registration is not needed to sell hemp products or hemp-infused products in Vermont. Vermont Hemp Program Rules were submitted in May 2019, setting the requirements for growing, transferring, selling, record keeping, reporting, and testing for growers and processors. Requirements for labeling and handling hemp products and hemp-infused products were also set forth. These provisions will become effective on July 1, 2020. Following the USDA's

announcement on its interim rules, Vermont decided to continue to operate under the 2014 pilot.

In May 2004, Vermont legalized medical marijuana with the enactment of Senate Bill 76. In July 2018, recreational use of marijuana by adults was decriminalized in Vermont, although there are certain restrictions in terms of use in public and possession. CBD products are legally sold in retail pursuant to Title 6 V.S.A. § 563.

Virginia

In July 2019, the Commissioner of Agriculture and Consumer Services advised to treat hemp-derived extracts intended for human consumption as food additives and conduct food safety inspections. The Virginia Department of Agriculture and Consumer Services also advised to contact the Food Safety Program for additional information on hemp-derived products that are not extracts but are intended for human consumption. The department also stated sale of topicals are not in the scope of Virginia's Food and Drink Law. In April 2020, two bills were enacted regarding CBD in food and food supplements and smokable hemp. Senate Bill 918 regulates facility conditions and requirements for the production of hemp-derived products that are intended for human consumption, as well as labeling requirements and testing. House Bill 962 regulates smokable hemp products for those over 21 and allows the sale of such products in vending machines.

In 2015, Virginia passed Senate Bill 955, regarding cultivation of industrial hemp by licensed growers as a part of a university-managed research program. In March 2018, with the approval of Senate Bill 247, the regulations became more compliant with the Farm Bill. This new bill, which came into effect in July 2018, allows farmers to conduct research without the need to partner with universities. In March 2019, with the amendments to the Virginia Industrial Hemp Law, the requirement of research purposes was eliminated, and commercial production of industrial hemp was permitted. Virginia decided to continue to operate under the 2014 pilot program.

House Bill 1251 became effective in March 2018, giving the permission to practitioners to issue certifications for the use of CBD oil or THC-A oil for the treatment or to alleviate the symptoms of intractable epilepsy. With the approval of Senate Bill 1557 in March 2019, physician assistants and licensed nurse practitioners became eligible to issue certifications. The bill also requires the Board of Pharmacy to establish dosage limitations, where each dispensed dose of CBD and THC oil will not exceed 10 mg of THC. Medical cannabis products can be purchased through five state-licensed pharmaceutical processors. In April 2020, the Governor approved Senate Bill 1015, which protects certain people involved with Virginia's medical cannabis program which is expected to begin in 2020.

Washington

House Bill 2334 legalized CBD oil. CBD hemp oil was also legalized in 2014 and strengthened with the Senate Bill 6206, which allows the use and possession of hemp products throughout the state. CBD products can be purchased in cannabis clinic dispensaries, brick-and-mortar locations such as health stores, vape shops, head shops, smoke shops as well as online. The Washington State Department of Agriculture (WSDA) set similar restrictions following the FDA around food and beverages that contain CBD in August 2019. Per WSDA, CBD is not allowed as a food ingredient, under federal and state law. The set rule is specified to food processors and distributors licensed by the WSDA. Marijuana processors licensed by the state are allowed to continue to produce CBD infused edibles for sale in state licensed marijuana retail stores only.

Hemp farming is legal in Washington state and their state plan is approved by the USDA and can be found here.

It is legal to use marijuana for both medical and recreational purposes in the state. Patients with certain diseases can use CBD products under the protection of the state's medical marijuana law.

Washington D.C.

Hemp CBD products are legal and widely available in the district, while marijuana-derived CBD products are restricted and can only be legally used by residents enrolled in the state's medical marijuana program.

Hemp cultivation is not legal in the District of Columbia.

In 2014, D.C. residents approved Initiative 71, which legalized the recreational use of marijuana, however gray areas still exist. The best way to describe the law is "home grow, home use". The law regulates the amount of marijuana adults can possess, the number of plants they can grow at home, and prohibits public smoking and selling. Medical cannabis users are the only ones who can purchase marijuana from a dispensary in D.C. with a medical marijuana card, however public use is still a criminal offense. In May 2019, Safe Cannabis Sales Act of 2019 was proposed by the Mayor. The legislation would allow the sale and purchase of recreational cannabis in Washington D.C.

West Virginia

CBD products are sold in retailers in West Virginia. However, the Department of Agriculture and Consumer Services issued a statement on July 15, 2019 regarding the manufacture, distribution, and sale of hemp-derived extracts. The Department stated they do not approve the manufacture, distribution or sale of food products or dietary supplements containing hemp-derived extracts including CBD oil, or hemp-derived

extracts intended for human consumption that is produced by a registered industrial hemp processor.

West Virginia passed its first hemp law in 2002. Senate Bill 447, known as the Industrial Hemp Development Act, defined industrial hemp as *cannabis sativa L.* that contains no more than 1% THC. Amendments to this Act were made and became effective as of March 21, 2019. With these changes, the requirement to grow hemp for research purposes is eliminated, and commercial production of industrial hemp is permitted. Current law defines hemp or industrial hemp as *cannabis sativa L.* with no greater than 0.3% THC. Following the USDA's interim rules, the state submitted its plan, and it has been approved by the USDA.

Senate Bill 386 was enacted in April 2017, legalizing medical cannabis, providing legal protection from arrest and prosecution for patients who are qualified to apply for registration with the Bureau of Public Health. The law prohibited the Bureau to issue patient and caregiver identification cards until July 1, 2019. However, as of October 2019, the program still lacks implementation and regulations. The Office of Medical Cannabis announced that their goal is to be able to provide medical cannabis to qualified patients in less than two years as Medical Cannabis Act provisions are still waiting for approval.

Wisconsin

There have been multiple attempts to regulate industrial hemp in Wisconsin since 2002, however they all failed in the legislative process. Senate Bill 119, also known as 2017 Wisconsin Act 100, regarding the growing and processing industrial hemp, and granting regulation authority was approved in November 2017. The industrial hemp research pilot program is regulated by Wisconsin Department of Agriculture, Trade and Consumer Protection. Wisconsin decided to continue operating under its 2014 pilot program after the USDA's announcement of its interim rules.

As of June 2020, medical and recreational marijuana use is illegal in Wisconsin. The State passed Assembly Bill 726 in 2014 and amended it in 2017, creating a legal path for patients with a medical condition to possess and use CBD medicines upon receiving a written recommendation from a practitioner. The products must be THC free. The Bill also allows practitioners and pharmacies to dispense CBD. Hemp-derived CBD products can be purchased from brick-and-mortar stores and vape shops all over the state.

Wyoming

Pursuant to House Bill 171, enacted in March 2019, CBD products can be purchased from retailers as well as online, if the products contain less than 0.3% THC.

House Bill 230, passed into law without the Governor's signature in 2017, categorized industrial hemp as an agricultural crop, and allows planting, growing, harvesting, possessing, processing or selling industrial hemp and industrial hemp seeds for licensed individuals. The bill gives the University of Wyoming the right to grow industrial hemp for research purposes. Wyoming Department of Agriculture is authorized to license individuals, to examine seeds, and to do sampling as well as adopt provisions to regulate testing. The bill also provides affirmative defense for marijuana possession or cultivation for licensed hemp growers. The USDA published the interim rules on October 31, 2019 and started accepting submissions from states. The Wyoming Department of Agriculture has submitted their plan to the USDA and got their approval. The State's plan can be found here.

The state does not have a medical marijuana program or allow recreational use of marijuana. House Bill 32 was passed in 2015, which allowed patients with intractable epilepsy or seizure disorders to medically use hemp extracts, that contains less than 0.3% THC, upon receiving a statement from a neurologist.

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