

WHITEPAPER

Delta-8 and the Emerging Cannabinoids



Introduction

The hemp-derived cannabinoid market has expanded well beyond CBD, making it a trend that can no longer be dismissed as a passing fad.

Hemp-derived cannabinoids include those naturally occurring in hemp, which is predominantly CBD, and any cannabinoid that can be synthesized from CBD. With a bit of chemistry, nearly every cannabinoid can be created from CBD molecules—including various forms of psychoactive THC. Consumers across the US now have unprecedented access to legal, psychoactive cannabinoids, even in states where there's little to no access to cannabis.

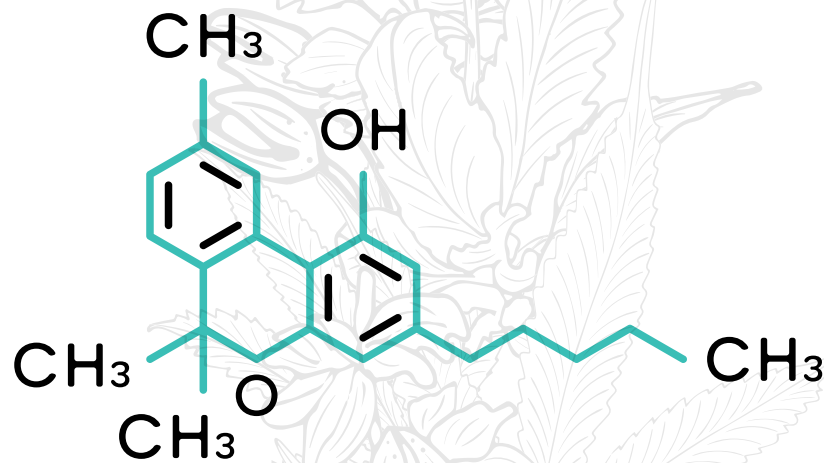
Overlapping in different ways with the US CBD and US cannabis market, the hemp-derived cannabinoid market—and its consumers—are difficult to gauge. In this report, we recap how the industry got here, explore existing data on hemp-derived cannabinoid consumers, and examine the laws and regulations that will impact this emerging market.



How Did We Get Here?

The 2018 Farm bill removed hemp and its extracts from the federal list of controlled substances, fully and unambiguously legalizing hemp-derived CBD nationwide. For some time, CBD was the most exciting cannabinoid the Farm Bill legalized, and brands jumped to offer CBD topicals, tinctures, vapes, gummies, and so much more. However, the excitement around the prospects of a new market resulted in a significant oversupply of hemp in the US. This caused companies to ask themselves: What else can we do with hemp under the Farm Bill?

The answer came in the form of a chemical process discovered more than 50 years ago. With relatively simple techniques, CBD from hemp can be transformed into other cannabinoids. Cannabinoids like CBN and CBG that naturally occur in smaller quantities than CBD were now readily available, and the industry saw a wave of products with CBN purported for sleep and CBG for added “wellness.” But non-psychoactive cannabinoids were just the beginning.



Important Definitions

Hemp: Cannabis plants that produce high amounts of CBD and are Farm Bill compliant. According to the Farm Bill, hemp is defined as “any cannabis plant, or derivative thereof, that contains not more than 0.3 percent delta-9 tetrahydrocannabinol (“THC”) on a dry-weight basis.

Hemp-derived cannabinoids are naturally produced by the hemp plant or are synthesized from those naturally occurring cannabinoids. CBD is the most plentiful cannabinoid in hemp. It can be synthesized into a wide variety of psychoactive and non-psychoactive cannabinoids.

Cannabis: Cannabis plants that produce high amounts of THC and thus are not defined as hemp via the Farm Bill. Cannabis is regulated at the state level via medical or adult-use consumer markets.

Cannabis-derived cannabinoids are naturally produced by cannabis plants or are synthesized from those naturally occurring cannabinoids. However, it is rare that naturally occurring cannabis cannabinoids would be synthesized due to the value of naturally occurring delta-9 THC within regulated cannabis markets.



Enter Delta-8 THC

Psychoactive delta-8 THC began appearing in CBD retailers around the end of 2020, and by mid-2021, it was the talk of the cannabinoid town. Brands exclusively offering delta-8 popped up, while CBD brands stuck with non-psychoactive cannabinoids still hoping to keep CBD and THC very separate industries. Thought to be less psychoactive than delta-9 THC, delta-8 THC was lauded as “diet weed” or “weed light” by the mainstream media. Articles, news broadcasts, and advertisers quickly exposed a massive number of Americans to delta-8. In Q2 2021, 26% of CBD consumers and 27% of cannabis consumers were already aware of delta-8 THC.

These early adopters of delta-8 tried it before most people, and their opinions helped define how delta-8 was marketed. Little is known about the actual differences between delta-9 and delta-8 THC, leaving anecdotal evidence to define the effects of hemp-derived cannabinoids.

Quotes from Early Adopters:

“ It was a rough weekend! I was in horrible pain yesterday! Thankful for my #delta8gummies. 1 gummy will last all day for me! I wish I had discovered these sooner! I love being able to eat my #weed I have kids, so no smoking in this house! ”

“ What do you do to decompress during breaks? Have you tried delta-8 to help reduce stress and anxiety? ”

“ I’ve really enjoyed spending my morning with a nice cup of coffee and some #delta8thc. Such a relaxing, yet energizing combination. Have you tried delta-8? ”

Where We Are Today

Fast-forward to Q2 2022, Brightfield Group's Evergi Consumers survey of the general population shows 18% of Americans are aware of delta-8, while 6% of Americans say they've used it in the past 6 months. Additionally, the hemp-derived cannabinoid space has continued to expand to offer even rarer cannabinoids—like delta-10 THC, THC-O, and HHC—as well as cannabis fans' favorite cannabinoid, delta-9 THC.

Favorable legal interpretations of the Farm Bill have given companies the confidence to push beyond delta-8 and now transparently sell delta-9 THC in CBD product formulations and on its own. CBD companies have warmed up to hemp-derived THC and now some of the largest players in US CBD offer it in some form. Even some cannabis brands in regulated cannabis markets are welcoming delta-8 to their product offerings!



**Delta-8 Protab –
Available in California**



**CBDfx Delta-9 THC Gummies +
CBD: Magic Melon Sativa –
Available Online**

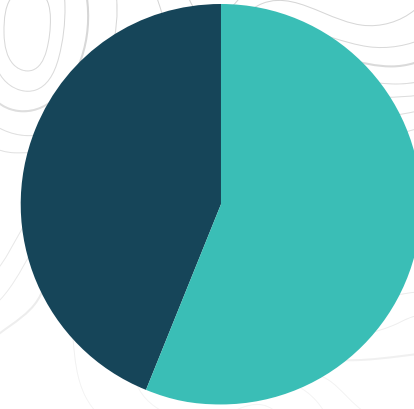


**cbdMD Hemp Derived Delta-9
Microdose Capsules**

The Hemp-Derived THC Users of Today

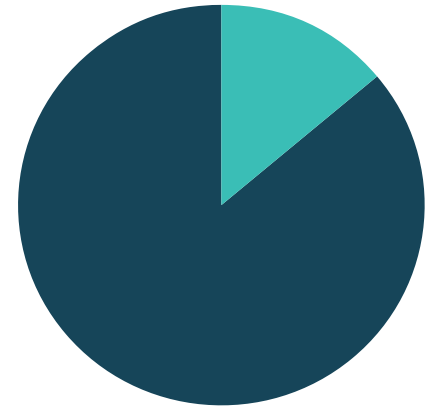
Brightfield's Evergi Consumers survey of the general population gives us a look into how Americans are staying well with the products and lifestyle they choose. Looking at users of delta-8 THC and delta-10 THC, we can see how the users of psychoactive hemp-derived cannabinoids are unique from others.

Hemp-derived THC users tend to be male, live in a city, and have children in the home. The cohort of users skews younger. 62% of delta-8 or -10 THC users are millennials or younger, which translates to 14% of millennials and Gen Z consumers having used delta-8 or -10 since 2021.



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Many hemp-derived THC products position themselves for relaxation. Looking at the data, the users of delta-8 and -10 THC need stress relief more than the average American, and more than cannabis and CBD users. 56% of psychoactive hemp-derived cannabinoid users rate their stress levels at a 4 or 5 out of 5. These users are more likely to be stressed by money, work, lack of sleep, and COVID-19 among many others. Most notably, delta-8 and -10 THC users are more likely to be stressed by their mental health conditions than the average consumer as well as cannabis and CBD users.

Overall, 71% of delta-8 and -10 users fall within the relaxation need state, while only 62% of CBD consumers and 59% of cannabis users fall in that need state. These hemp-derived THC users were also more likely to be affected by the COVID-19 pandemic, with 74% of them saying it changed their priorities. Whether it's the branding working or people finding genuine relaxation from these products, delta-8 and -10 THC users are particularly stressed out consumers.

Beyond seeking relaxation, hemp-derived THC users are much more likely than the average American to fall into the Wellness Seekers or Trendy Enthusiasts personas. These cannabinoids are still new, and these two groups represent consumers who are trendsetters and fast followers of the latest wellness trends. The Trendy Enthusiasts are driven by their high-stress lives to find cutting-edge well-being solutions to better their body, mind, and spirit. In this case, that solution may be delta-8 or -10 THC. The Wellness Seekers look to the Trendy Enthusiasts for that next big thing.

But over the last year, another persona group has adopted delta-8 and -10 THC use: the Better Way Believers. Only 15% of delta-8 or -10 THC users fell into this persona group in Q3 2021. In Q2 2022, that had risen to 27%. The Better Way Believers are idealists who focus on bettering their bodies "the right way" or by trying new "proven ways." This group increasing over the last year shows hemp-derived THC is standing the test of time, finding its way into viable roles in people's lives rather than being just a passing fad.

	Q1	Q2	Q3	Q4
Trendy Enthusiasts	29%	20%	20%	18%
Wellness Seekers	37%	35%	29%	35%
Better-Way Believers	15%	22%	27%	27%

Overview: User Profiles

	Hemp-Derived Cannabinoid User	General Population	Cannabis User	CBD User
Stress tactic: Use Cannabis	36%	11%	41%	26%
Stress Tactic: Use CBD	23%	6%	15%	25%
Stress Levels: 4 or 5	56%	36%	51%	50%
Agree: Pandemic Changed my Priorities	74%	59%	69%	70%
Research New Health Concepts: Often	30%	16%	21%	26%
Main Cause of Stress: Mental Health Condition	31%	17%	28%	26%

	Hemp-Derived Cannabinoid User	General Population	Cannabis User
Male/Female	61% M / 39% F	49% M / 51% F	56% M / 44% F
Dwelling: City	41%	29%	38%
Have Children in the Home	58%	33%	46%
Wellness Persona: Wellness Seekers	34%	20%	28%
Wellness Persona: Trendy Enthusiasts	21%	10%	15%
Gen Z	13%	7%	10%
Millennial	49%	29%	45%
Gen X	31%	31%	31%
Baby Boomer	7%	26%	13%

Source: Brightfield Group; Evergi Consumers; Q3 2021-Q2 2022; n = 21,111

CBD Users & Hemp-Derived THC

As delta-8 THC entered the same retail channels as CBD, brands worried the new cannabinoid would take away from their CBD business. When looking at US CBD consumer insights, it is clear that there are a growing number of CBD consumers simultaneously using hemp-derived THC. Awareness of delta-8 and -10 THC has consistently risen among CBD consumers, with 50% of them being aware of the cannabinoids in Q2 2022. Beyond awareness, 15% have tried these cannabinoids by purchasing once, while 17% report purchasing delta-8 and -10 THC multiple times.

CBD users that also regularly purchase delta-8 or -10 THC are more likely to be frequent, experienced users who prefer larger doses of CBD and use it throughout the day. So, while it's unclear how many consumers entirely stop using CBD when starting to use hemp-derived cannabinoids, it's evident that those that do continue to use it are using much more CBD than consumers who don't buy delta-8 or -10 THC.



Considerations for the Future of Hemp-Derived Cannabinoids



Safety Considerations

When considering the future of hemp-derived cannabinoids, it is imperative to discuss the safety of current products on the market. In August 2021, the American Chemical Society published an article on the chemistry community's concern over delta-8 THC. It takes a knowledgeable chemist to safely do the reaction that turns a CBD molecule into a THC molecule. Improper or imprecise techniques will result in high amounts of reaction byproducts. The health effects of consuming such impurities are unknown.

While many companies test their products to provide certifications of analysis (COAs) to consumers, labs can only test for known byproducts. Even when a byproduct is known, no methods of testing exist for some of the chemicals inadvertently created from the transformation of CBD into THC. Additionally, poor synthesis of CBD to THC is resulting in illegal amounts of delta-9 THC in hemp-derived cannabinoid products. An independent investigation by CBD Oracle revealed "76% of tested products contained delta-9 THC at greater than the 0.3% limit set by the 2018 Farm Bill."

With a lack of comprehensive legislation that considers the science behind hemp-derived cannabinoids, the market will continue to be flooded with incorrectly dosed products with potentially harmful byproducts. For these reasons—as well as the psychoactive effects—organizations that certify CBD, like the US Hemp Authority, won't certify hemp-derived THC. Non-psychoactive hemp-derived cannabinoids like CBN and CBG, however, aren't receiving the same scrutiny despite having similar potential byproducts if not carefully synthesized.

Consumer knowledge around the safety of hemp-derived cannabinoids is very low, as they must rely on brand marketing and word of mouth. Little has been done to educate consumers on this issue, while governments are grappling with keeping consumers safe versus the effort it would take to regulate such an industry. So far, states are skirting regulating these products by outright banning them or doing nothing to change how they're being sold under the Farm Bill. In most states where hemp-derived cannabinoids are sold, there is no way for consumers to know a product is safe other than the company's good word, which isn't worth much when sales are blatantly valued over safety.

The DEA

Before the delta-8 craze even started, the U.S. Drug Enforcement Agency sought to limit the hemp-derived THC space. It published an interim rule in August 2020 establishing that “all synthetically derived tetrahydrocannabinols remain schedule I controlled substances.” This ruling has never been enforced, and DEA officials have since walked back that position. In a virtual townhall in June of 2021, the DEA’s chief of intergovernmental affairs, Sean Mitchell answered the following when asked about delta-8’s legality:

“I repeat again, at this time—per the [2018] Farm Bill, the only thing that is a controlled substance is delta-9 THC greater than 0.3% based on a dry-weight basis.”

So when it comes to the DEA, hemp-derived cannabinoid companies that stay compliant to the 0.3% delta-9 THC concentration by dry weight should be in the clear.

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The FDA

While the U.S. Food and Drug Administration has yet to provide rules for the hemp industry created by the 2018 Farm Bill, it distinctly warns that delta-8 THC “has serious health risks.” The administration did not address the growing delta-8 market until May 2022 when it issues warning letters to five delta-8 companies making unapproved medical claims. An information page on the FDA website was launched at the same time as these letters, along with the following comment from FDA Principal Deputy Commissioner Janet Woodcock:

“The FDA is very concerned about the growing popularity of delta-8 THC products being sold online and in stores nationwide. These products often include claims that they treat or alleviate the side effects related to a wide variety of diseases or medical disorders, such as cancer, multiple sclerosis, chronic pain, nausea, and anxiety,”

The information page *5 Things to Know about Delta-8 Tetrahydrocannabinol – Delta-8 THC* includes info on the adverse effects that have resulted from delta-8 THC products and the unsafe chemicals that are likely present in these products. Besides sending warning letters to five (out of the hundreds) of hemp-derived cannabinoid brands on the market, the FDA has done little to enforce the “illegal marketing of unapproved delta-8 THC products.”

The FDA is the federal government entity most pessimistic about hemp-derived cannabinoids. There is the potential that the administration would delegitimize hemp-derived cannabinoids upon regulating CBD. But with its slow pace and limited enforcement abilities, the FDA will likely not significantly slow down the hemp-derived cannabinoid market.



Federal Courts

The first federal court interpretation of the Farm Bill regarding hemp-derived cannabinoids came in May of 2022. In the case, *AK Futures LLC v. Boyd St. Distro, LLC*, the Ninth Circuit Court of Appeals ruled that hemp-derived delta-8 THC is considered “hemp” under the 2018 Farm Bill. This was very good news to hemp-derived cannabinoid companies as it legitimized their working definition of delta-8—and therefore other hemp-derived, psychoactive cannabinoids—as being “hemp.”

With this being the first and only case of its kind, time will tell if a different court walks this decision back or interpret hemp-derived cannabinoids’ legality in a less favorable way. But so far, the federal court’s decision has added confidence to the growth of the hemp-derived cannabinoid space.

State Laws

The most impactful legislation and regulation of hemp-derived cannabinoids has been on the state level. 14 states have outright banned delta-8 THC. They are:

- Alaska
- Colorado
- Delaware
- Idaho
- Iowa
- Montana
- New York
- Nevada
- North Dakota
- Oregon
- Rhode Island
- Vermont
- Utah
- Washington

While it was expected states with strict cannabis prohibition might ban psychoactive cannabinoids, many of these states have existing legal cannabis markets. Colorado, Oregon, and Washington are some of the most mature cannabis markets in the U.S. and did not want these unregulated, psychoactive cannabinoids muddying the waters of their markets.

Banning hemp-derived THC was an easy way for states to address the safety concerns around hemp-derived cannabinoids rather than find a way to ensure the products are safe. Two states, Michigan and Connecticut, decided to regulate hemp-derived THC with their cannabis industries. Though this limits where hemp-derived cannabinoids can be sold, it puts the safety of the product on par with legal cannabis. Several other states attempted to regulate hemp-derived THC but failed.

One standout state in terms of pro-hemp-derived cannabinoid regulation is Minnesota. In June 2022, it passed a bill that regulates hemp-derived THC in food and drink products up to 5mg of THC per serving with no more than 50mg THC per package. Only foods and beverages can be sold, shutting down the existing hemp-derived inhalables market in the state. Besides complying with these formats and dosages, hemp-derived cannabinoid products will have to meet certain testing requirements set by the state. Other than this, no license is required to manufacture, distribute, or sell these products. Instead of creating an entirely separate psychoactive cannabinoid industry—as has been done in every other instance—Minnesota is taking a relatively hands-off approach in allowing its citizens access to legal psychoactive foods and beverages.

On the other hand, there is Oregon. In July 2022, the state banned all “artificially derived cannabinoids” citing concerns around a lack of testing protocols for such products. Already having a mature cannabis market with its own set of issues, Oregon opted to keep its citizens safe by banning cannabinoids synthesized from hemp rather than trying to test and regulate it.

States will have the biggest say in whether the hemp-derived cannabinoid market will survive. If more states take approaches like Minnesota, we could have more markets that regulate hemp-derived food and beverages for its citizens. However, the trend so far has been to ban some or all hemp-derived cannabinoids.



Where Will It Go From Here?

Though this report is not a comprehensive market forecast, there are some key takeaways the industry should keep in mind that will inform the future of hemp-derived cannabinoids.

- Brands should take the safety of their products seriously for the good of the consumer and the industry as a whole. Unsafe products will continue to draw FDA scrutiny. Additionally, if hemp-derived cannabinoids are behind a major health crisis—such as the vape crisis in 2019—states that currently allow hemp-derived cannabinoids could be swayed to ban them. Instead of waiting for a health crisis, entities wishing to lobby for the safe regulation of hemp-derived cannabinoids should do so at the state level.
- Pending no crisis occurs due to unsafe products, hemp-derived cannabinoids will likely remain legal in states that are already decided on their legality in 2021. States that start or continue to work on legislating hemp-derived cannabinoids may decide to outright ban it, regulate it with cannabis, or limit how it is sold and tested. In terms of legal and enforceable policy, the federal government looks very unlikely to reign in the hemp-derived cannabinoid industry.
- Brands should focus on sales in states that have pro-hemp-derived cannabinoid laws currently in place. Minnesota is an interesting opportunity for hemp-derived delta-9 THC drinks and edibles brands to experiment. Brands can get a solid start in hemp-derived cannabinoid-friendly states to prepare for potential expansion into future states that adopt such policies.
- More consumers who prefer “the right way” of doing things and “proven” methods of health and wellness maintenance (referred to as the Better Way Believers) are trying delta-8 and -10 THC. This shows how quickly these cannabinoids are transforming their image from the newest, cutting-edge ingredient to an understood wellness ingredient.

