



EIGHTH
REVOLUTION

CANNABINOID PLAYBOOK

May
2023

KEEPING YOU
AHEAD OF THE
CANNABIS
INDUSTRY SINCE
2018



NOTICE

This monthly playbook is provided for informational purposes only and is intended to offer general guidance on topics. The information contained herein should not be construed as legal, tax, financial, or investment advice, and it should not be relied upon as such. The information contained in this playbook is the opinion of the authors and is subject to change without notice.

Readers are cautioned that any investment or financial decision made based on the information provided in this playbook is at their own risk. Readers should exercise their own independent judgment and conduct their own due diligence before making any investment or financial decisions. 8th Revolution and its affiliates do not accept any liability for any direct, indirect, or consequential loss arising from any use of this playbook or its contents.

Readers may share the information contained in this playbook, but any reproduction, modification, distribution, or republication of any part of this playbook must give credit to 8th Revolution.

This playbook is protected by U.S. and international copyright laws, and all rights are reserved by 8th Revolution. Unauthorized reproduction, modification, distribution, or republication of any part of this playbook is strictly prohibited.

For questions or concerns, please contact

info@8threv.com
(516) 653-2006
www.eighthrevolution.com



TABLE OF CONTENTS

Cannabis Masterclass	4
Twitter Strategies for Leveraging Targeted Advertising for Cannabis Companies: Geographic, Demographic	7
Interview with Raj Grover	9
Interview with Andreas Neuman	10
International Update	11
Minor Cannabinoid Wholesale Pricing	12
"The Enchanting World of Terpenes: A Journey Through Nature's Fragrant Tapestry"	15
Germany Scales Back	17
Sector Market Analysis	19
Challenges, Opportunities, and Future of Cannabis Research	21
Hot in the News	25



Welcome to your Cannabis Masterclass

The Dime is where you'll learn how to navigate complex regulatory challenges and how the industries leaders position their organizations to operate in the unknown.



Cultivation

[Breeder Steve: The Pope, Breeding Secrets & Living Library of Cannabis Genetics.](#)

[How Trulieve became the Most Dominant Cannabis Company in the World ft. Kim Rivers \(Part 1\).](#)

Investing

[The Chairman of Cannabis ft. Jason Wild](#)



Investing

[The Great Disrupter ft. Leslie Bocskor](#)

HEMP

[Safe Banking is Dead. What's Next for Investing in Cannabis ft. Jason Spatafora](#)

Investing

[New York's Adult Use Cannabis Market Update ft. Jesse Campoamor](#)

Deep Dive



Gunnar34332, 03/08/2023

Easily my favorite cannabis podcast

Thank you both for your expertise and insight. Your investigation and research into the companies you discuss is invaluable and brings a fresh perspective to cannabis. I really enjoyed your recent guest and look forward to hearing more. My favorite podcast!



Arjun3433, 03/08/2023

A Cannabis Must listen

The Dime is one of the few podcasts that gets immediately moved to the top of my "up next" list whenever a new episode drops.





Dear Reader,

We want to thank you for your trust, and, most importantly, your time. With the endless number of resources at your disposal, we appreciate you leaning on us as your guide through the muddy waters of this industry's limitless news and intelligence.

In an industry that changes as aggressively as ours, we can't stress the importance of effective decision-making enough. Though the information in the report is never meant to dictate specific actions or guarantee certain outcomes, we hope that we're able to provide another voice in the room, one that illuminates, simplifies, and supports you.

If you want us to expand on any topic, please never hesitate to reach out. For any suggestions or questions, we can be reached directly at info@8threv.com

Welcome to the Revolution



Bryan Fields

*Managing Director
& Co-Founder
Eighth Revolution*



Kellen Finney

*CSO & Co-Founder
Eighth Revolution*



IN THIS ISSUE

Cannabis Firms Embrace Twitter Ads as Key Marketing Strategy: House of Puff & Trulieve Lead the Charge

Kellen Finney, Eighth Revolution

As the cannabis industry continues to expand and evolve, companies must develop effective marketing strategies to stay competitive. Social media advertising has become a crucial tool for companies to reach potential customers and promote their products. Cannabis companies can utilize this tool with Twitter adjusting their policies. We've seen House of Puff and Trulieve already dive headfirst into the program. It's inevitable that others aggressively follow and get started with creative and powerful messaging to drive and deliver results.

NBA Pioneers Progressive Cannabis Policies, Allowing Players to Promote and Invest in Marijuana Companies

Bryan Fields, Eighth Revolution

The NBA reportedly plans to remove marijuana from its list of banned substances for players and allow them to invest in and promote cannabis companies. This policy change comes as part of the new seven-year collective bargaining agreement, which is also expected to eliminate drug testing requirements for marijuana. This decision would make the NBA particularly progressive on the issue, as other leagues like MLB have only allowed sponsorships with CBD businesses. NBA Commissioner Adam Silver had previously indicated that the league's temporary cannabis policies could become permanent. While other sports organizations, such as UFC and NFL, have relaxed rules around cannabinoids, the NBA's policy appears more comprehensive.

“

***"Twitter Has
Your Back"***

***Alexa Alianiello, Head of Partnership at Twitter
at Benzinga Capital Conference***

“



Twitter Strategies for Leveraging Targeted Advertising for Cannabis Companies: Geographic, Demographic

Cannabis companies have been fighting and are in desperate need of some form of unlocking. While most were echoing their sentiments toward DC to provide a lifeline, someone else heard the call instead. Twitter execs presented at Benzinga Capital Conference with an incredibly powerful statement.

"Twitter Has Your Back"

Those are four simple words, but did anyone else have upsetting flashbacks kick in? It sounds an awful lot like the empty, open promises we have seen in the past from {insert politician name}. Twitter has ALREADY altered its platform policy to support the cannabis industry by relaxing its advertising policy a far cry from Meta's policy of shutting down Instagram accounts. Paid advertisements are indeed advantageous for Twitter as a new revenue stream, but those with a locked toolbox shouldn't scoff at a tool that finally breaks out. This is extremely helpful for various businesses in the cannabis space, not just the brands or retailers trying to drive sales.

Before we dive into some of the specifics and benefits, it's important to understand the following:

The policy is fluid. Cannabis is challenging, and the rules are gray. Twitter will likely need to make ongoing changes and updates to its policy as time goes on. The policy, while straightforward, has some items that may deter some initially. Minimum spending will likely be high, and patience will be critical, something I desperately struggle with as well.

Here is an excerpt from the policy:

"Advertisers may not promote or offer the sale of cannabis (including CBD- cannabinoids)
Exception: Ads for topical (non-ingestible) hemp-derived CBD topical products containing equal to or less than the 0.3% THC government-set threshold."

And other expected restrictions:

- Must not appeal to minors in the creative; landing pages must be age-gated, and sales must be age-verified.
- Must not make claims of efficacy or health benefits.
- Must not make false/misleading claims.
- Must not show any depiction of cannabis product use.
- Must not depict people using or under the influence.
- Must not encourage transport across state lines.

[The full policy is linked here.](#)

While the policy may hinder some, spend may be another issue. Here is the hard truth about paid ads. They're expensive, and it takes time for you to learn which creative aspects and copy resonate with your audience. It also takes time for Twitter algorithms to figure out, too. Time costs money, and you'll need to make sure you don't expect instant results.

Now, let's get into the benefits of spending the money. Please note that these strategies aren't just for Twitter ads but for theories and examples behind why and how to think, utilizing this as a tool. The one thing about the individuals in the cannabis industry is that they are creative and will constantly seek to find out how to operate in the gray.

Marketing has an old adage about touching points, which are interactions with your brand product, with Salesforce believing it takes "6-8 marketing touches to generate a viable sales lead."



Twitter Strategies for Leveraging Targeted Advertising for Cannabis Companies: Geographic, Demographic

Currently, brands on dispensary shelves are using price-slashing tactics to drive sales. This tactic is detrimental for all parties as a no-margin product hurts operations and leads the consumer to misalign the value of products. Cannabis companies can now alter their marketing efforts to deliver clever messaging and crafty imaging to capture attention and solidify brand positioning BEFORE they enter the dispensary, which helps to build brand staying power.

While many can easily associate paid ads with sales conversion, the area I would AGGRESSIVELY suggest for many others is opening the top of the funnel. Gary Allen, also at the Benzinger Capital Conference, said, "The cannabis industry has a top-of-the-funnel problem." The top of the funnel is the ability to take current non-consumers or rare cannabis consumers and provide them with educational and valuable content to slowly move them closer to intent and interest. This messaging isn't price-driven; it's attention-capturing and helps consumers identify that cannabis can be a potential solution or substitute for another product.

For example, for the boomer who uses a combination of booze and Ambien to go to sleep, are you aware of an alternative? This requires a deeper understanding of who your target customer is and building out all the messaging and efforts around that consumer to ensure that your brand/product speaks to them directly. More importantly, running paid ads is a constant effort of testing, editing, and revising to find the ideal combination. Here are a few ways I'd set up campaigns.

Geographic Targeting (Geofencing)

Geographic targeting allows cannabis companies to focus their advertising efforts on demographic criteria in a specific location. Think of it like an invisible fence. A targeted individual logs onto a Wi-Fi connection in an area and is cookie'd, which allows the brand to target them more aggressively in the future or more directly now. Using the boomer in our example from before, it may be helpful to serve them a quick, broad ad on plant medicine as they enter a local CVS, Target, or liquor store.

Persuading consumers to enter a dispensary could also be a metric that brands look to leverage for success. For example, let's say, on average, the dispensary gets 2,000 individuals in the door. If 25% of those individuals spend \$80, it's easy to see how beneficial advertisements are to the top line without having a direct way to attribute ads for ROI.

Here is the math for those who prefer to see it drawn out.

In-store visits	Conversion	Avg Basket Size	Revenue
2,000	25%	\$80	\$40,000

Now, if you spend \$5,000 on paid ads and increase JUST the number of customers coming in the door, you come out ahead after subtracting the spending.

Customers	Conversion	Avg Basket Size	Revenue
3,000	25%	\$80	\$60,000 - (5,000) = \$55,000

By geofencing to target potential customers within a specific radius around their store or dispensary, this strategy allows the retailer to promote special deals, new product arrivals, and other incentives to drive foot traffic and increase sales. Brands have limited capital, so deploying a targeted approach to promote a single SKU or drive interest into a dispensary for a new release can help find others that are not everyday dispensary consumers.



Twitter Strategies for Leveraging Targeted Advertising for Cannabis Companies: Geographic, Demographic

Retargeting

Retargeting is an effective strategy for re-engaging users who have visited a company website, engaged with previous ads, or abandoned shopping carts. Retargeting is also crucial for post-purchase brand loyalty building. If a consumer has purchased your product, you have the chance to build on that messaging and lock in the next step of brand loyalty.

Brands can use retargeting to re-engage users who have shown interest in their products but haven't made a purchase. By displaying ads, the brand can encourage users to revisit their website and complete their purchase.

A local retailer can use retargeting to remind customers about special deals or promotions they might have missed. This strategy can lead to increased sales and help build customer loyalty through repeated purchases.

An e-commerce platform can use retargeting to remind users about abandoned shopping carts. By displaying ads about the cart, the platform can encourage users to return to the site and complete their transactions, increasing overall sales and revenue.

Demographic and Audience Targeting

Demographic targeting allows cannabis companies to tailor their advertising campaigns to reach specific age groups, genders, or other demographic factors based on product preferences and customer data. Cannabis brands can segment their audiences based on demographic data to create targeted campaigns for different product lines. For example, the brand could target younger consumers with vape products while targeting older users with CBD-infused products for pain relief.

A local cannabis retailer can use demographic targeting to appeal to specific customer segments based on their preferences. For instance, a retailer might target female customers with cannabis-infused beauty products or male customers with cannabis-related accessories. A cannabis industry publication could use demographic targeting to reach potential subscribers interested in the latest news, research, and trends.

For many of you, this is Marketing 101, but for others that are wondering if Twitter ads are worth it or how it will help them, the answer is "it depends." It's critical to understand before you engage in any marketing efforts. Before we start any project, I always ask, "What is your goal, and what does success look like?" Most of the time, the goal is an increase in sales, which means awareness-based marketing is not going to deliver the top-line numbers you are likely seeking. For many of you that are looking to build your brand and looking to invest in the growth of your business, experimenting here would be beneficial. We don't have all the tools utilized from a standard perspective, but we need to be creative with the ones we have. Be patient, and recognize that "learning" is a part of the algorithm that everyone hates.

If you need help, ping me Bryan@8threv.com or cannabis@twitter.com



The Dime



Listen Now

A weekly podcast covering the entire [Cannabis Industry](#).

Raj Grover: The Visionary Behind the Costco of Cannabis and Its Thriving Ecosystem

Rajs' goal for High Tide in the US

"I've made my intentions clear that we wanna be a top-five, multi-state operator in the United States, and people have [said], 'Raj, that's an ambitious goal.' Yes, it is. But again, look—the proof is in the pudding. Look at what we've done in Canada. What is stopping us from doing that in the United States?"

Diversification at the root of the business inception:

"We were definitely a diversified company since inception. While building the smoke shop portfolio in Canada, I also started a manufacturing distribution company. We want to completely differentiate ourselves, so we became a diverse cannabis company. Then, we supplemented it further with famous brands. So, we've always been a diversified cannabis company, which is [...] built in our roots."

Race to the bottom?

"Anybody can just discount the price, and anyone can say, 'Oh, I'm going to drop my price, and I will attract more customers.' The next guy is going to do that, and then the next guy is going to do that. That's a race to the bottom. What we wanted to do was create an efficient ecosystem.



Raj Grover, CEO of High Tide

We looked at our ecosystem. We have top international CBD brands. We have some of the best consumption accessory platforms in the world. We have some of the [...] top-notch brands of consumption accessories worldwide, so we decided to leverage all those elements in our overall ecosystem, bring them into our Canada Cabana stores, and make it into a membership model."





The Dime



Listen Now

A weekly podcast covering the entire [Cannabis Industry](#).

Cannabis Creatives: How Innovators are Redefining the Industry with Artistic Innovation, ft. Andreas "Dre" Neumann

How Dre thinks about creating perfect items and drawing inspiration from U2's Bono

We always try to make the perfect thing, and you have to present [the consumer with] something great [that]you would use yourself [and] would like. At my last startup, Bono was on the advisory board, and I had this meeting with Bono, and I had this dinner with him. [...] He said basically, at some point, he stopped asking other people's opinions about his music. He said if he likes it, then that's enough for him and for the band. And he said, statistically, if he likes it, millions of people out there will also like it, but there will be millions as well who don't connect to it. [...] But when it's good for me [and] the team, and good for the consumers we are testing it with, then it's good for everybody.

Getting consumers to feel something different or the urge to try something different

People want every day—they want something new, even if it's the same strain, if it's in a different packaging if it's red and not blue, then we say that could be different. It could be the same stuff, but it feels different. Even if it's in a different bag, like, it feels different. All this plays into it.

Are you with great friends? Are you with some people you don't know? Are you in a restaurant? Are you doing it illegally on a plane? It's always something different. A different experience, right? So, this new brand is ready for that, and the most important thing, it doesn't take itself so seriously like the others. It's just liberating and in all aspects of it as well. And this, it's a lifestyle brand, really, but it's all about what's in the back and not what's on the back.

Drawing on inspiration from previous roles and getting fit to be in cannabis

I'm like a method actor in this business; like, I have to be, I have to become it. When I do a documentary, I become the person. When I shoot rock and roll, I become part of a band. I become it.



Andreas Neumann
Chief Creative Director at Jushi

In cannabis, [...] from the first day I was involved, I said I have to try every product out there. I have to know what this is about. [...] I cannot do this during the day, but every night since then? Every night, I'm consuming.

I've learned so much about products because, as you know, it's not as easy as trying [something] once and then knowing what it is. It's a kind of journey. You maybe start out with vape, then you go to gummies, and you come back to flower. Then, you enjoy really flower, and then you maybe get even into concentrate, and then, you [go] back to the gummy.



*** The following transcript is AI-generated and some words have been removed for spacing. Please listen to the episode for full context.



INTERNATIONAL UPDATE

Canada

EXCLUSIVE: Uber Says It's Making
3 Important Social Impacts With
Weed Deliveries

Germany

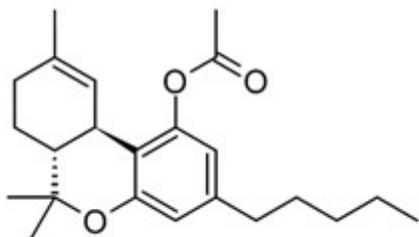
Germany scales back
cannabis liberalization after
EU talks

Israel

Israel's medical cannabis
patient growth slows as
industry awaits major reform



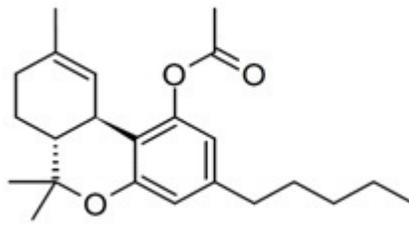
Minor Cannabinoid Wholesale Pricing



Industry Name: THC-OAcetate

CAS Number: 23132-17-4

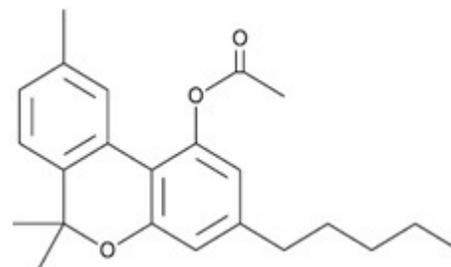
IUPAC: (6aR,10aR)-6,6,9-trimethyl-3-pentyl-6a,7,8,10a-tetrahydro-6H-benzo[c]chromen-1-yl acetate



Industry Name: HHC Acetate

CAS Number: 6692-85-9 (racemic)

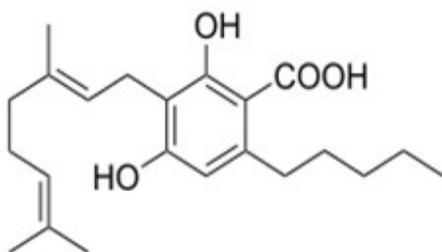
946512-74-9 (6aR,10aR)
IUPAC: (6aR,10aR)-6,6,9-trimethyl-3-pentyl-6a,7,8,9,10,10a-hexahydrobenzo[c]chromen-1-ol



Industry Name: CBN-O Acetate

CAS Number: 51895-51-3

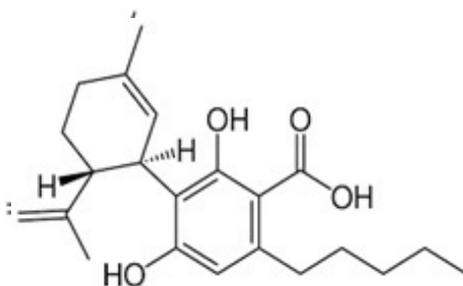
IUPAC: 6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol, 1-acetate



Industry Name: CBGA

CAS Number: 25555-57-1

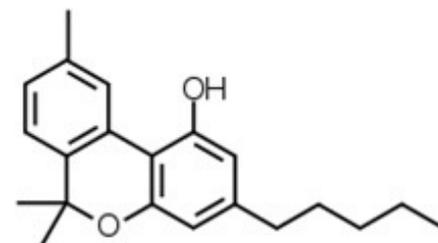
IUPAC: 3-[(2E)-3,7-Dimethylocta-2,6-dien-1-yl]-2,4-dihydroxy-6-pentylbenzoic acid



Industry Name: CBDA

CAS Number: 1244-58-2

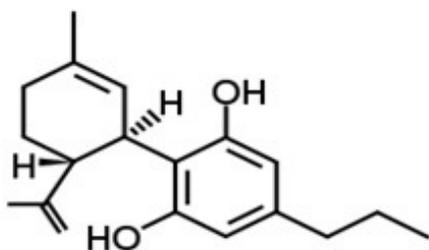
IUPAC: 2,4-dihydroxy-3-[(1R,6R)-3-methyl-6-(1-methylethenyl)-2-cyclohexen-1-yl]-6-pentyl-benzoic acid



Industry Name: CBN

CAS Number: 521-35-7

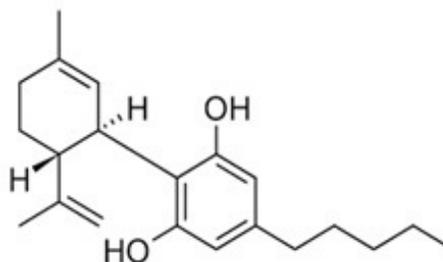
IUPAC: 6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol



Industry Name: CBDV

CAS Number: 24274-48-4

IUPAC: 2-[(1R,6R)-3-methyl-6-(1-methylethenyl)-2-cyclohexen-1-yl]-5-propyl-1,3-benzenediol



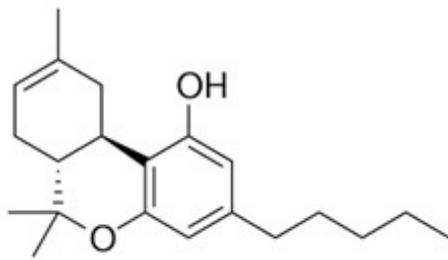
Industry Name: CBD

CAS Number: 13956-29-1

IUPAC: 2-[(1R)-3-methyl-6R-(1-methylethenyl)-2-cyclohexen-1-yl]-5-pentyl-1,3-benzenediol



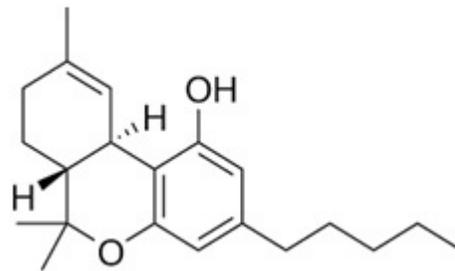
Minor Cannabinoid Wholesale Pricing



Industry Name: Δ8-THC

CAS Number: 5957-75-5

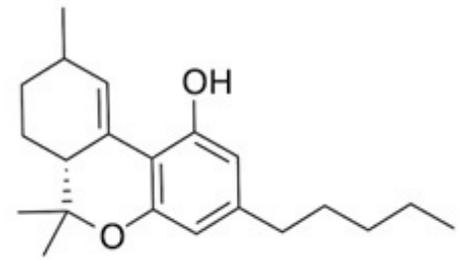
IUPAC: 6aR,7,10,10aR-tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol



Industry Name: Δ9-THC

CAS Number: 1972-08-3

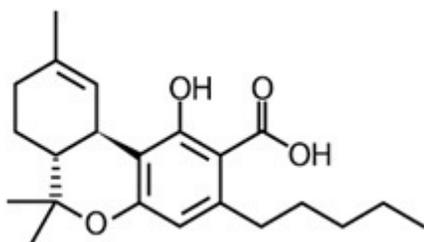
IUPAC: 6aR,7,8,10aR-tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol



Industry Name: Δ10-THC

CAS Number: (6aR, 9S) 95588-87-7

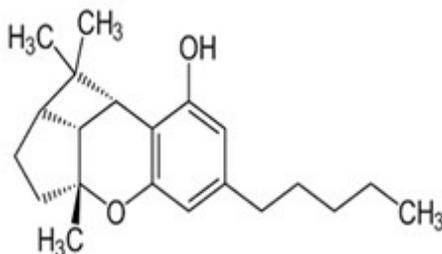
IUPAC: (6aR-trans)-6a,7,8,9-tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol



Industry Name: THCA

CAS Number: 23978-85-0

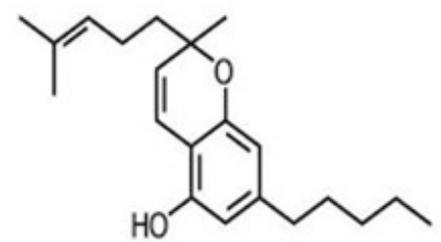
IUPAC: 6aR,7,8,10aR-tetrahydro-1-hydroxy-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-2-carboxylic acid



Industry Name: CBL

CAS Number: 21366-63-2

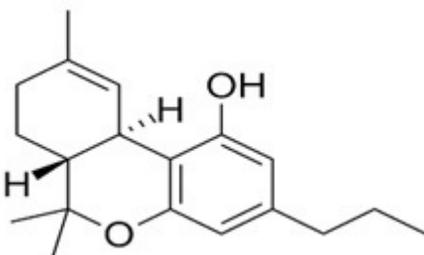
IUPAC: (1aS,1aR,3aR,8bR)-1,1,3a-trimethyl-6-pentyl-1a,1a,2,3,3a,8b-hexahydro-1H-4-oxabenzof[cyclobuta[cd]inden-8-ol



Industry Name: CBC

CAS Number: 20675-51-8

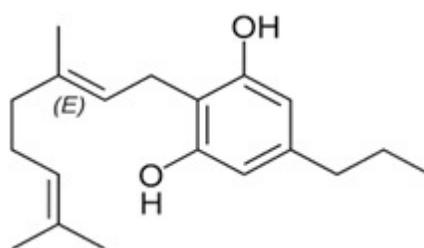
IUPAC: 2-methyl-2-(4-methyl-3-penten-1-yl)-7-pentyl-2H-1-benzopyran-5-ol



Industry Name: THCV

CAS Number: 31262-37-0

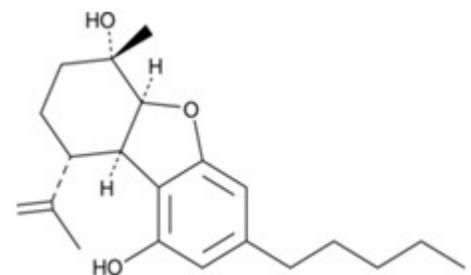
IUPAC: 6aR,7,8,10aR-tetrahydro-6,6,9-trimethyl-3-propyl-6H-dibenzo[b,d]pyran-1-ol



Industry Name: CBGV

CAS Number: 558224-11-8

IUPAC: 2-[(2E)-3,7-dimethyl-2,6-octadien-1-yl]-5-propyl-1,3-benzenediol



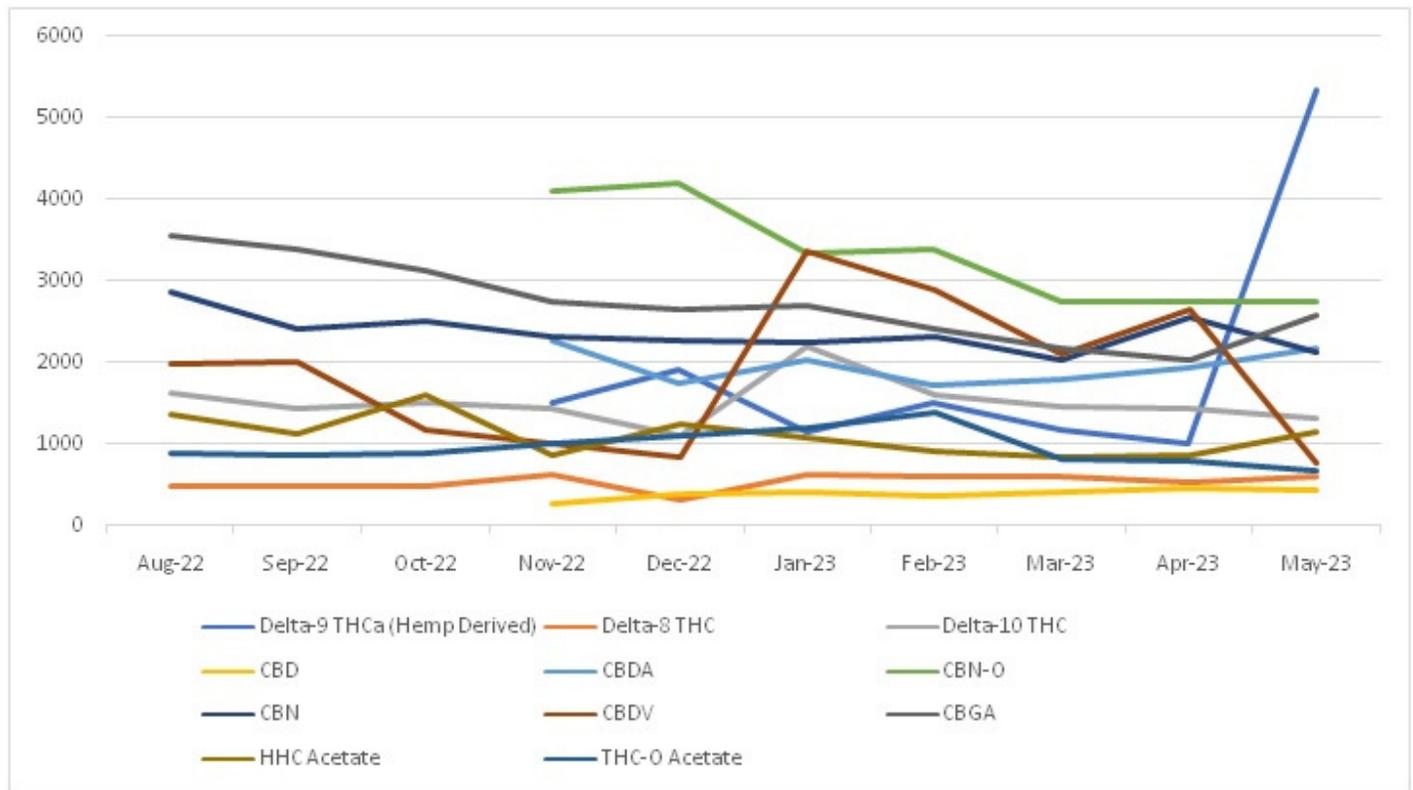
Industry Name: CBE

CAS Number: 52025-76-0

IUPAC: (5aS,6S,9R,9aR)-5a,6,7,8,9,9a-hexahydro-6-methyl-9-(1-methylethenyl)-3-pentyl-1,6-dibenzofurandio



Minor Cannabinoid Wholesale Pricing



Key Take based on the updated wholesale pricing data for the period of January 2022 to May 2023, we can observe the following trends in the U.S. cannabinoid market:

1. Delta-9 THC (Hemp Derived) Distillate experienced a significant increase of 434% in pricing from April to May 2023, jumping from \$1,500.00 to \$5,333.33 per kilogram.
2. Delta-8 THC Distillate observed a 13% increase in pricing, moving from \$525.00 to \$595.83 per kilogram.
3. Delta-10 THC Distillate saw an 8% decrease in pricing from April to May 2023, dropping from \$1,433.33 to \$1,316.67 per kilogram.
4. CBD Isolate witnessed a 7% decline in pricing, decreasing from \$461.67 to \$430.00 per kilogram.
5. CBDA Isolate experienced an 11% increase in pricing, moving from \$1,950.00 to \$2,168.75 per kilogram.
6. CBN-O Distillate pricing remained stable at \$2,750.00 per kilogram.
7. CBN Isolate saw a 17% decrease in pricing, dropping from \$2,560.00 to \$2,125.00 per kilogram.
8. CBDV Distillate experienced a sharp 71% decline in pricing, decreasing from \$2,666.67 to \$762.50 per kilogram.
9. CBGA Isolate witnessed a 28% increase in pricing, moving from \$2,025.00 to \$2,583.33 per kilogram.
10. HHC Acetate Distillate observed a 29% increase in pricing, moving from \$882.67 to \$1,141.50 per kilogram.
11. THC-O Acetate Distillate saw a 15% decline in pricing, decreasing from \$800.00 to \$683.75 per kilogram.

The wholesale pricing data for various cannabinoids in the U.S. region from January 2022 to May 2023 displayed diverse trends. While some products experienced price increases (Delta-9 THC Distillate, Delta-8 THC Distillate, CBDA Isolate, CBGA Isolate, and HHC Acetate Distillate), others witnessed price decreases (Delta-10 THC Distillate, CBD Isolate, CBN Isolate, CBDV Distillate, and THC-O Acetate Distillate), and one remained stable (CBN-O Distillate). It is important to consider multiple factors when analyzing these pricing trends, including market demand, regulatory changes, and production costs. The data reveals that the market for cannabinoids is in constant flux, making it essential for businesses to keep a close eye on industry trends and adjust their strategies accordingly.

*Disclaimer: Some of the text from this analysis was generated with an AI system.



"The Enchanting World of Terpenes: A Journey Through Nature's Fragrant Tapestry"

As you leave the garden, your curiosity about terpenes is sparked. You realize that the captivating scents you experienced don't just come from cannabis plants but from a variety of other plants as well. You embark on a journey to explore the fascinating world of terpenes and their role in nature.

Terpenes are not exclusive to cannabis plants; they can also be found in a wide range of other plants. They serve various purposes in these plants, such as attracting pollinators, deterring pests, and protecting against environmental stressors.

Imagine wandering through a vibrant, aromatic garden filled with plants that boast an array of colors and scents. You feel a sense of serenity wash over you as you take in the sweet, earthy, and fruity aromas surrounding you. As you stroll along, you come across a section filled with cannabis plants, each with a distinct fragrance contributing to the garden's enchanting atmosphere. Intrigued, you stop to appreciate the uniqueness of each plant's aroma and ponder the secrets behind their captivating scents.

Terpenes are a large group of natural compounds found in plants, including cannabis. They help create the fantastic smells and flavors we experience in many plants. There are different types of terpenes, but the ones most important to cannabis are called monoterpenes and sesquiterpenes.

As you explore the garden, you pick a ripe, juicy mango from a nearby tree, savoring its sweet, tropical scent. You then stroll through a grove of pine trees, inhaling the refreshing, crisp aroma that fills the air. These delightful fragrances, created by the terpenes myrcene and pinene, are also part of the unique and alluring scents you encounter in cannabis plants.

Monoterpenes are the simplest kind of terpenes. They create the strong, fresh smells in many plants, including cannabis. Some examples of monoterpenes are myrcene, limonene, and pinene. Because they are small, monoterpenes can easily get into our cells and interact with our bodies. This means they might have various health benefits, like helping with inflammation, pain relief, and anxiety.

Venturing into a dense forest, you find yourself surrounded by towering conifer trees. The fresh, resinous scent that fills the air is primarily due to the presence of the terpene pinene. Pinene not only contributes to the enticing aroma but also helps protect the trees from fungal and bacterial infections.

As you continue exploring the garden, you come across a spice garden filled with cinnamon and black pepper plants. The warm, spicy scent of cinnamon and the sharp, invigorating aroma of black pepper capture your attention. The terpene caryophyllene is responsible for these enticing fragrances and offers potential health benefits related to inflammation and immune function.

Sesquiterpenes are more complex than monoterpenes and often have heavier, more intricate smells. Some common sesquiterpenes in cannabis include caryophyllene, humulene, and farnesene. They evaporate more slowly and interact differently with our bodies than monoterpenes. For example, caryophyllene can directly interact with parts of our immune system, which could help with inflammation and overall immune health.



"The Enchanting World of Terpenes: A Journey Through Nature's Fragrant Tapestry"

As you continue exploring the garden, you come across a spice garden filled with cinnamon and black pepper plants. The warm, spicy scent of cinnamon and the sharp, invigorating aroma of black pepper capture your attention. The terpene caryophyllene is responsible for these enticing fragrances and offers potential health benefits related to inflammation and immune function.

Sesquiterpenes are more complex than monoterpenes and often have heavier, more intricate smells. Some common sesquiterpenes in cannabis include caryophyllene, humulene, and farnesene. They evaporate more slowly and interact differently with our bodies than monoterpenes. For example, caryophyllene can directly interact with parts of our immune system, which could help with inflammation and overall immune health.

As you continue your journey, you stumble upon a field of wildflowers, each with its own unique scent profile. You can't help but notice the harmonious balance of nature at work, where terpenes serve as the key ingredient that connects plants to their environment and helps them thrive.

Terpenes also play a role in the way plants communicate with one another. Some plants release certain terpenes into the air when they are damaged or under stress, which can act as a signal to nearby plants to activate their defense mechanisms.

In a lavender field, you find the terpene linalool emitting a calming, floral scent that is often used in aromatherapy to help people relax and reduce anxiety. In the plant itself, linalool helps attract pollinators while repelling harmful insects and pests.

As the sun begins to set, you take one last look at the garden, marveling at the intricate tapestry of scents and flavors woven by nature. You leave with a newfound appreciation for the mysterious world of terpenes and their potential to enhance our lives through their captivating aromas and potential health benefits.

In summary, terpenes are a diverse group of natural compounds found in many plants, including cannabis. They create the unique scents and flavors we experience and serve various important functions, such as attracting pollinators, repelling pests, protecting against environmental stress, and facilitating communication between plants. This rich diversity of terpenes not only contributes to the incredible scents and flavors we enjoy in nature but also provides valuable insights into the complex world of plant ecology. Moreover, research suggests that terpenes might also have health benefits.



Germany Scales Back – non-profits not billion-dollar markets

By Marc Brandl

In September 2021 German voters elevated a coalition of three political parties, colloquially known as the Stop Light Coalition, into power in Berlin. They were elected by voters to implement a wide range of progressive issues. Included among them was creating Europe's first legal recreational cannabis market. Cannabis activists, businesses and aspiring entrepreneurs have been fixated on Germany ever since. With good reason. A wealthy population of 84 million and a leader in the EU with the largest medical cannabis market in Europe. A multi-billion-dollar market rivaling California was just a few years away. Pitchdecks were created, business plans developed, deals were made. Breadcrumbs from politicians and political insiders suggested the Coalition would propose legislation that would create a market similar in structure and intent to Canada. Not ideal but not bad either.

This all changed in late March when word began to get out that the Coalition was toning down their plans for cannabis quite dramatically. An official announcement in early April revealed a plan more in line with Malta or Catalonia than Canada.

Instead of a nationwide commercial market the coalition draft legislation sets up:

- Non-profit social clubs that can grow and sell for up to 500 registered members;
- Personal possession of 25 grams of cannabis will become legal;
- Home grow of 3 plants;
- A Swiss-style experiment with licensed store able to sell to a limited number of consumers to be trialed in some cities;

Why the sudden change of heart? The reason cited most often are international treaty obligations and pushback from the European Commission. Some even cite the failures of the California recreational market.



Germany Scales Back – non-profits not billion-dollar markets

By Marc Brandl



Mark Collins MBA • Following

President at Highly Capitalized & Chief Financial Officer at Grupo Flor

4d • Edited •

GERMANY the industrial **#powerhouse** of the **#EuropeanUnion** and far and away the largest economy in Europe—today announced it's adult-use recreational Cannabis market is going to be nothing like ours whatsoever.

German officials clearly must've been **#dismayed** looking at the total **#shambles** that is the USA Cannabis **#market**.

The German officials in charge must've then scratched their heads & said to **#themselves**:

"To heck with this making money lark, let's forget brands and retail. Let's let the people grow their own at **#home**, and let's even let the people **#form** their own Cannabis Clubs—let's let the **#people** enjoy **#Cannabis**

But it's not Brussels or California that's made the coalition change their tune. All politics is local they say and that's true in Germany as anywhere else. The Coalition is facing discontent and a surge in the polls for the conservative opposition. Opinion polls are favorable to cannabis legalization but not overwhelming as in the US.

POLITICS | GERMANY

Germany's opposition flying high in polls

Volker Witting

03/03/2023

A monthly survey of German voters finds they still support Ukraine but are disenchanted with the three-way coalition government. Ahead of International Women's Day they are lukewarm on the new feminist foreign policy.



Germany Scales Back – non-profits not billion-dollar markets

By Marc Brandt

Populism Updates
@PopulismUpdates · Follow

In Germany, the AfD hit 17% in a poll for the first time in years

Party	Percentage
CDU/CSU	27 %
SPD	19 %
GRÜNE	16 %
FDP	6 %
AfD	17 %
LINKE	6 %
FREIE WÄHLER	2 %
Sonstige	7 %

7:56 PM · Feb 10, 2023

[Read the full conversation on Twitter](#)

1K Reply Share

Berlin votes for Christian Democrats in re-run election

Early results suggest that 22 years of uninterrupted Social Democrat rule in Germany's capital may come to an end.

Just as politics, personal agendas, and issues completely unrelated to cannabis derail Congressional legislation like SAFE Banking in the US so too Germany. Canada and Uruguay have navigated UN Treaties and Germany as its most important member could have pushed the EU Commission into accepting a broader, more ambitious plan.

Regardless of your opinion on the new legislation it's a major step forward for cannabis reform in the EU's biggest most powerful country. Just as California led in the nation in the early Prop. 215 days with a non-profit model Germany can still lead the EU to brighter days for cannabis consumers and eventually businesses.



SECTOR ANALYSIS*

INDICES	3 MONTH%	6 MONTH %
S&P 500	2.81%	15.35%
DOW JONES	-0.83%	11.76%
NASDAQ	12.66%	18.10%
 GLOBAL CANNABIS	-22.52%	-29.98%
AMERICAN CANNABIS	-19.68%	-42.48%



"Even thriving companies are keeping their positivity close to their chest because they are aware of others that likely won't survive this period." Morgan Paxhia in Kiplinger

*This text expresses the sole opinion of the writer. The thoughts expressed are independently formed and the writer is not compensated by any third party.

SECTOR	3 MONTH	6 MONTH
HEALTHCARE	0.7%	11.37%
TECHNOLOGY SECTOR	11.28%	26.99%
INDUSTRIALS	0.12%	20.66%
FINANCIALS	-6.27%	11.87%
CONSUMER CYCLICAL	5.34%	12.08%
CONSUMER NON-CYCLICAL	0.97%	16.48%
BASIC	-2.12%	28.69%
ENERGY	-1.20%	11.37%
UTILITIES	-2.76%	12.61%
 ALTERNATIVE HARVEST ETF (MJ)	-27.66%	-32.27%
MULTI-STATE OPERATORS (MSOS)	-24.90%	-50.09%

*Information retrieved from NCV and E*trade.



Part 2: Challenges, Opportunities, and Future of Cannabis Research

Jeffrey N. Keller PhD, Rapid Analytics E: jeff@rapidanalytics-ms.com

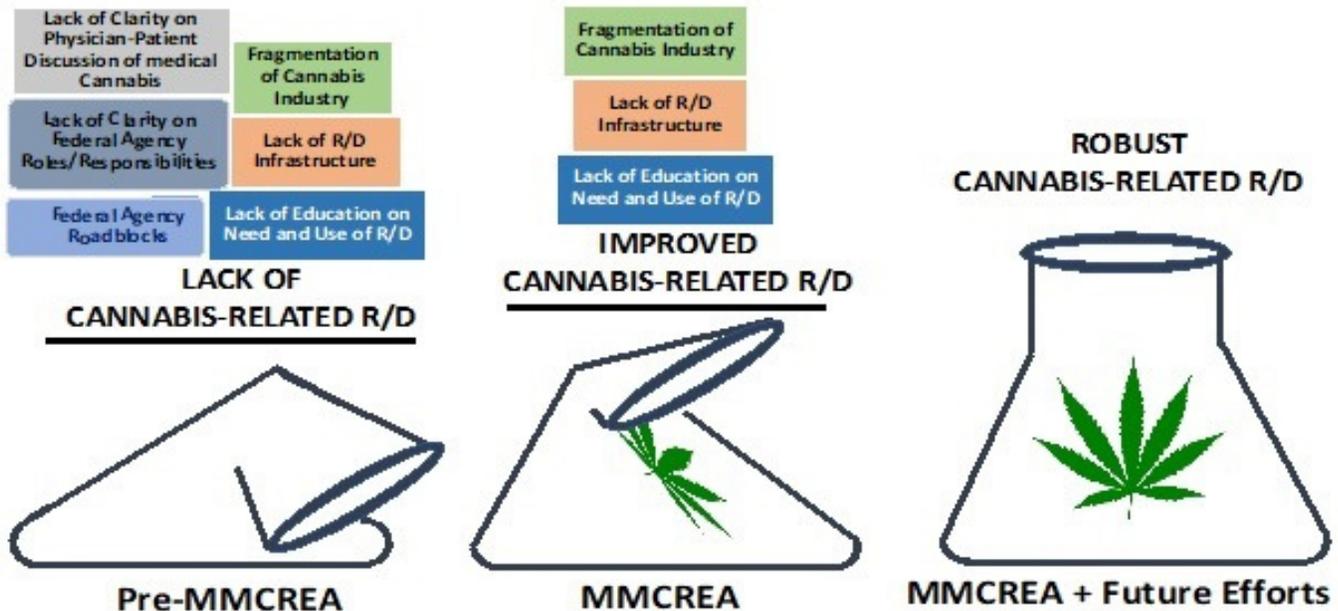


Figure 1. The medical marijuana and cannabidiol research expansion act (MMCREA) improves many, but not the majority, of obstacles that have impeded cannabis-related R/D.

How to Leverage the Success of MMCREA Moving Forward

There are several direct and indirect impacts of the MMCREA that are likely to serve as a strong catalyst for both short-term and longer-term improvements in cannabis-related R/D. For example, the MMCREA is the first stand-alone bi-partisan legislation passed by both the house and senate and therefore provides a roadmap for successful cannabis-related legislation in the future. The MMCREA also importantly provides much-needed Federal legitimacy to the topic of cannabis-related R/D and identifies some key components to target with future legislative, advocacy, and research investment efforts.

Allow Federal Tax Breaks for R/D Efforts

Internal Revenue Service (IRS) 280E currently prevents companies involved in the cannabis industry from taking advantage of several standard corporate tax breaks, including the routine deductions for R/D costs, and only allows for cannabis companies to deduct the cost of goods. Several States including California and New York allow, and other States are in process of passing legislation to allow, cannabis businesses operating under select licenses to take State tax deductions that are not exempt Federally due to IRS 280E. Because MMCREA clearly provides Federal support for many aspects of cannabis-related R/D there is a unique opportunity in the coming years to remove or attenuate the restrictions imposed by IRS 280E on the cannabis industry, particularly as they relate to the topic of tax deductions for R/D expenses.



Challenges, Opportunities, and Future of Cannabis Research

Reduce Fragmentation of Cannabis Industry

Fragmentation in the cannabis industry is a nearly unavoidable consequence of the fact there are 36 States and the District of Columbia that have varying degrees of legalization for cannabis use, ranging from restrictive medical cannabis use to legalization of recreational cannabis use. The fragmentation of the cannabis industry across various States has led to a lack of standardization and an inability to build key infrastructures that are required for a robust R/D environment. The provisions of the MMCREA around the requirement of Federal agencies to ensure an adequate supply of research-grade cannabis, and to report regularly to congress on any obstacles to cannabis-related R/D provide a unique opportunity to begin reducing the fragmentation that currently plagues the cannabis industry. *By focusing on multi-state, intrastate, and interstate processes and systems as part of the MMCREA it is likely that a systematic and continual decrease in the fragmentation of the cannabis industry can occur.*

Common Standards, Terminology, and Procedures

A central feature in the successful maturation of any scientific research area is the establishment of a standardized set of terms and procedures for conducting, reporting, and interpreting research findings. Cannabis-related research is in urgent need of establishing each of these aspects for the diverse types of research ranging from agronomy, biochemistry, pharmacology, drug/target development, pre-clinical research, and clinical research. The MMCREA provides the justification and impetus for the establishment of each of these components as part of working with Federal agencies to successfully establish the components required by the MMCREA.

Establishment of Centralized Cannabis-Related Databases

Similar but distinct from the establishment of a common “language” for conducting cannabis-related R/D there is a need to establish core databases for each of the different forms of research including agronomy, biochemistry, pharmacology, drug/target development, pre-clinical research, and clinical research. By working from common databases for much, but not all, of cannabis-related research the impact of research findings is compounded with each scientific effort. The move to common core databases is a common feature of most mature scientific pursuits and has paid off in both anticipated and unanticipated ways for the scientific community working in fields working in nearly every type of scientific research. The requirements of MMCREA provide a clear framework to initiate the development and growth of these core databases in the context of cannabis-related R/D.

Key Components in Addition to MMCREA that are Needed

Peer-Review

Peer review is a central feature of any viable and longstanding R/D effort and is a key component of R/D that is notably absent for cannabis-related R/D efforts. While a smattering of peer-reviewed cannabis-related publications occurs annually in traditional scientific journals, these articles are not routinely read or cited by most individuals actively working in cannabis-related R/D efforts.



Challenges, Opportunities, and Future of Cannabis Research

Although the basis for this reality is clearly multifactorial, it is likely the root cause is the current lack of a journal that focuses on the day-to-day interest of individuals actively focused on cannabis-related R/D. In particular, there is an urgent need for peer-reviewed research that provides data-driven policies and procedures for the agronomy, analytical testing, pharmacology, safety, and clinical testing aspects of the cannabis industry.

The conceptual framework for peer-review involves scientists/authors submitting appropriately designed and properly reported findings from their research to an established journal so that an editor and editorial board can have the manuscript reviewed anonymously by knowledgeable peers in the field (Figure 2). The outcome of peer-review produces a result of rejection, acceptance, or much more frequently a requirement for further revision and future review of the revised manuscript (Figure 2). This first step of peer-review results in the production of manuscripts that have results that have been initially validated by the review from knowledgeable peers in the field (Figure 2). The additional and longstanding validation of the manuscript and its findings comes from the number of times the work is viewed, downloaded, and ultimately cited by peers working in the field (Figure 2). In a relatively young field like cannabis R/D there is also an important role for the peer-review process to educate scientists and authors about the scientific method, basic aspects of statistical analysis, and the utilization of commonly accepted methods and procedures.

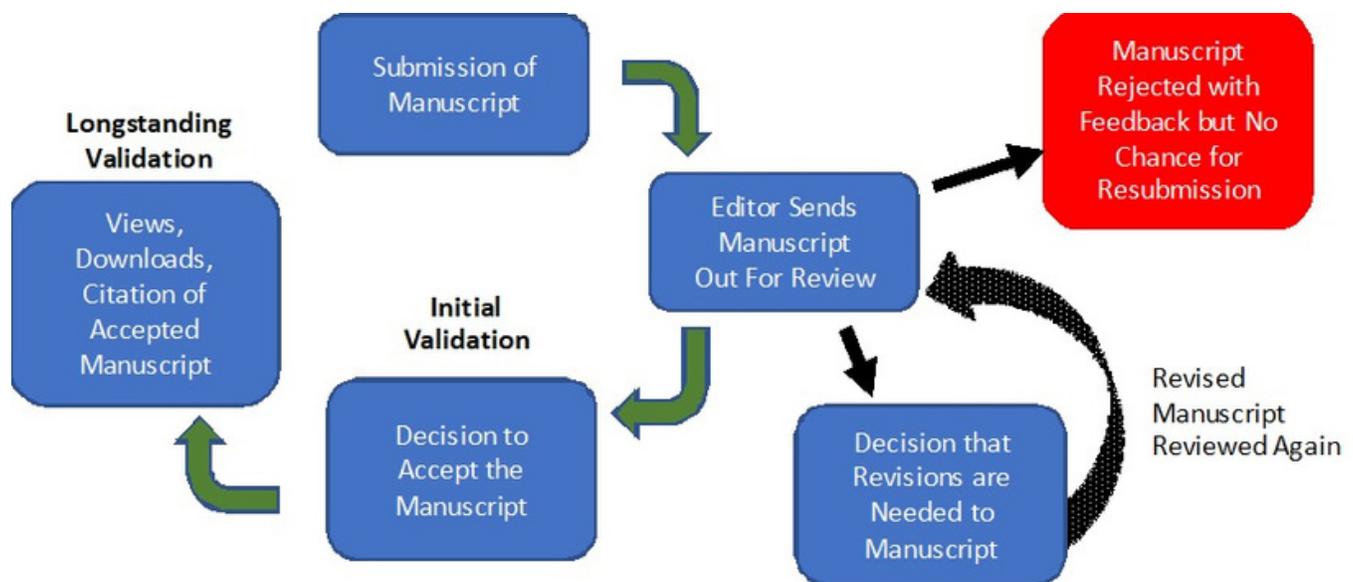


Figure 2. Steps involved in peer-review and concept of initial and longstanding validation of findings in the manuscript.

There are multiple types of journal formats that can be utilized for the publication of accepted manuscripts, but ultimately these journals fall into either reader-sponsored journals (requiring readers to have a paid subscription or pay for access to each individual article) or author-sponsored journals (where authors pay handling and processing fees to allow the articles to be freely available for viewing by readers).



Challenges, Opportunities, and Future of Cannabis Research

The author-supported model of publishing is commonly referred to as open-access, and open-access has taken off in popularity in recent years with the requirement from the National Institutes of Health (NIH) and other funding agencies to make the research findings derived from their funding be freely available to the scientific community. Developing open-access journals for cannabis-related R/D efforts could allow for the accelerated development of a robust and much-needed peer-review solution for the field. In particular, the development of open-access journals that build off the momentum of the annual Emerald Conference and MJ Biz conferences could be particularly helpful in jumpstarting cannabis-related R/D efforts.

Funding of Cannabis-Related R/D

The ultimate accelerator to cannabis-related research will be the establishment and growth of funding mechanisms to support research in the field. Funding from the National Institutes of Health, US Department of Agriculture, and other Federal agencies will need to be complemented by fundings from private corporations and advocacy groups supporting cannabis-related research. The MMCREA provides the framework for Federal, private, and not-for-profit entities to begin meaningful efforts to provide research funding in the most critical areas of cannabis-related research.

Education on R/D

While nearly everyone involved in the cannabis field states the need for more research the majority of individuals and organizations do not have the plan to pursue or incorporate research into their mission and/or business model. In the past, the slow pace and obstacle-ridden pursuit of cannabis-related research promoted a lack of education on the importance and need for research in most cannabis-focused organizations. The MMCREA provides a key inflection point in the evolution of cannabis-related research, but without a corresponding effort to educate the cannabis community on the importance of incorporating research and research-based data into their core mission and business model, it is likely that cannabis-related research will remain in a suppressed state. It is crucial to the long-term vibrancy of cannabis-related research to continually bring the various for-profit, not-for-profit, and advocacy stakeholders together to help shape the future of cannabis-related research to ensure the maximal impact of MMCREA and related efforts.

References

1. Lowe H, Toyang N, Steele B, Bryant J, Ngwa W. The Endocannabinoid System: A Potential Target for the Treatment of Various Diseases. *Int J Mol Sci.* 2021;22(17):9472. Published 2021 Aug 31. doi:10.3390/ijms22179472
2. Bilbao A, Spanagel R. Medical cannabinoids: a pharmacology-based systematic review and meta-analysis for all relevant medical indications. *BMC Med.* 2022;20(1):259. Published 2022 Aug 19. doi:10.1186/s12916-022-02459-1
3. Kaur S, Sharma N, Roy A. Role of Cannabinoids in Various Diseases: A Review. *Curr Pharm Biotechnol.* 2022;23(11):1346-1358. doi:10.2174/1389201023666211223164656



Challenges, Opportunities, and Future of Cannabis Research

References

4. Pollastro F, Minassi A, Fresu LG. Cannabis Phenolics and their Bioactivities. *Curr Med Chem.* 2018;25(10):1160-1185. doi:10.2174/0929867324666170810164636
 5. Legare CA, Raup-Konsavage WM, Vrana KE. Therapeutic Potential of Cannabis, Cannabidiol, and Cannabinoid-Based Pharmaceuticals. *Pharmacology.* 2022;107(3-4):131-149. doi:10.1159/000521683
 6. Pagano C, Navarra G, Coppola L, Avilia G, Bifulco M, Laezza C. Cannabinoids: Therapeutic Use in Clinical Practice. *Int J Mol Sci.* 2022;23(6):3344. Published 2022 Mar 19. doi:10.3390/ijms23063344
 7. White CM. A Review of Human Studies Assessing Cannabidiol's (CBD) Therapeutic Actions and Potential. *J Clin Pharmacol.* 2019;59(7):923-934. doi:10.1002/jcph.1387
 8. Amin MR, Ali DW. Pharmacology of Medical Cannabis. *Adv Exp Med Biol.* 2019;1162:151-165. doi:10.1007/978-3-030-21737-2_8
 9. MacCallum CA, Russo EB. Practical considerations in medical cannabis administration and dosing. *Eur J Intern Med.* 2018;49:12-19. doi:10.1016/j.ejim.2018.01.004
 10. <https://www.congress.gov/bill/117th-congress/house-bill/8454/text>
-



HOT IN THE NEWS

April 2023

- 1 Missouri: The Next Billion-Dollar Cannabis Market?**
- 2 Connecticut Cannabis Sales Reach Record High in March**
- 3 Texas House Approves Bill To Allow Medical Marijuana As Opioid Alternative And Replace THC Limit**
- 4 90 businesses submit medical cannabis license applications**
- 5 EXCLUSIVE: Uber Says It's Making 3 Important Social Impacts With Weed Deliveries**
- 6 EXCLUSIVE: 'Twitter Has Your Back,' Exec Tells Benzinga's Cannabis Capital Conference As Weed Advertising Finds A Home On Social Media**
- 7 Cannabis panel curbs Curaleaf's bid to continue selling recreational weed**
- 8 Higgs Cannabis Headed to Canada**



DISCLAIMER

The information contained in this document should not be relied on as the basis for any decision or action. It is general advice only and you should exercise your own independent skill and judgment. In some cases, the material in this document may incorporate or summarize information or recommendations of third parties or comprise materials contributed by third parties (*third party material*). Such third-party material is assembled in good faith but does not necessarily reflect the considered views of Eighth Revolution or indicate a commitment to a particular course of action.

We make every effort to ensure that links included in this document are kept up-to-date. The accuracy of the links is dependent upon the owners of those sites letting us know of any changes. If you find a link that does not work, please contact us by emailing info@8threv.com.

To the extent permitted by law, Eighth Revolution and its employees and agents are not liable for any loss or damage arising from the use of, or reliance on, the material contained in this document, whether or not caused by a negligent act or omission. We offer references for our playbooks upon request and include them at the end of each installment in multi-part series.

info@8threv.com
(516) 653-2006
www.eighthrevolution.com
