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# Cannabinoid MONTHLY PLAYBOOK

December 2022





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# 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 find one area of information more helpful than others and want us to expand on the topic, please never hesitate to reach out. For any suggestions or questions, we can be reached directly at [info@8threv.com](mailto:info@8threv.com)

## Welcome to the Revolution

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## IN THIS ISSUE

# December 2022

### Tight Capital Markets + Lower Cash Flow = A Cold Winter

**Kellen Finney, Eighth Revolution**

Winter has come, and the cold brought tighter capital markets, lower cash flow, and long cold months to follow. When looking at both the cannabis and hemp industries, the average price per pound continues to be stagnant across the country, and minor cannabinoid prices continue to drop across the board. Both trends signal an oversupply which has led to a challenging business environment. Over the last few months, several of our highly skilled and dear friends have chosen to leave the industry due to job volatility. Companies need to last more than a couple of years due to the startup nature of each organization, the challenging regulatory environment, and poorly run business operations. Over the next 18 months, we will see the most significant industry consolidation in the post-prohibition era of cannabis. The companies that are left standing will have generational wealth opportunities.

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### Is anyone making money in cannabis?

**Bryan Fields, Eighth Revolution**

We've spoken to countless leaders across the industry. While the sentiment around the industry morale is positive, the internal details are somewhat concerning. Most are not making any money, and everyone feels like they are getting squeezed from both sides.

Undoubtedly, things are hard in the cannabis industry. The truth and fear are that things will only get more challenging over the following months.

Diversification and finding additional growth prospects continue to be a topic of conversation.

Continue asking yourself how we can leverage our efforts to increase TAM (total addressable market). In the near term Q1, the 2023 projections are likely adjusting as the industry looks to DC for some form of catalysts.

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***According to CBS NEWS  
"New York is set to award  
its first retail licenses to  
sell cannabis  
Monday(11/21/22). Some of  
the shops that get awarded  
licenses could be open by  
the end of the year."***

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# The Cannabis Industry's Secret Sauce

by Bryan Fields

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The cannabis industry is full of challenges and problems. We've spent countless months screaming them from the rooftop. The "secret sauce" in the industry is the individuals inside. As we do each month in this Cannabinoid Playbook, we break down the various challenges hindering the cannabis industry and try and uncover precisely what it means.

One aspect that is massively undervalued and overlooked is the incredible people who work and operate inside of it.

The people inside the cannabis industry are different. In the technology industry, most start out with a cushy six-figure salary with incredible perks like yoga, cooking classes, and bean bag chairs everywhere.

In cannabis, the opposite exists, and everyone is currently fighting to survive.

Capital markets are in the dumps. Limitations, challenges, stigmas, and fragmented markets are all around us. Washington, DC, continues to use cannabis as a pawn. This industry has endless obstacles and challenges.

Everyone from the largest MSOs to the smallest mom-and-pop operators is struggling. I assure you that there are no bean bag chairs here.

The most impressive and underrated aspect that hasn't been taken away is the feeling of comradery.

Individuals in this industry are warm, friendly, and open. It's the unspoken truth of recognizing that you are doing hard shit, and I am doing hard shit. Respect.

This feeling is different from any of the previous jobs I have had. In my previous life, people were more closed off and more status quo. Industries like technology, oil and gas, and pharma have been around for a while, with individuals having careers in those spaces.

## Cannabis is different.

Suppose you have worked in cannabis for ten years. You have an entire career. One year in cannabis is equal to a dog year.

Before going to Las Vegas for MJBIZCON, I wondered what the sentiment would be. It's another year without safe banking and legal interstate commerce and with ongoing issues with NY rollout.

Most cannabis companies are not thriving. It would be easy for people to be slightly down.

Instead, what I witnessed was the complete opposite: incredibly warm, excited, friendly people were there to reach their hand out to introduce you or connect with you.

The industry is still so new, and the ones pushing forward have a resiliency and openness different from traditional industry.

That feeling of comradery is why some of us pushed our limits and stayed out until the wee hours of the next morning. Because we genuinely care about each other. We recognize and appreciate the time together. We know that tomorrow will be challenging, and many of us have already decided this fight isn't for us.

The cannabis industry is unique, and the main reason is because of the people in it. The cannabis industry is certainly not perfect, but as we continue to grow and evolve, the individuals behind the various organizations, from legacy to legal, are the sole reason why I continue to be massively bullish on the cannabis industry. Thank you for being you.

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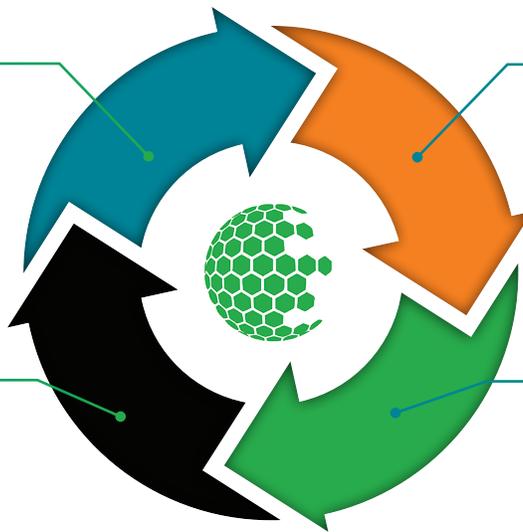
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Founded on the belief that quality cannabis science  
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# The Dime Listen Now

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

## Why operating in California is a different type of challenge

California's kind of special.[...]If you said you're number four in Florida, that kind of means you're last. In California, it means you're better than 1,600 other brands nipping at your heels every day trying to kick you off the shelves. I sometimes say [that] California lives in the future. Our consumers are some of the most educated out there.

[It's been] 27 years since medical cannabis happened, and I think sometimes people think I'm arrogant about California. [It's] not that at all. It's just [that] if you had someone who had been practicing football for 27 years and someone [who] had been practicing football for two years, who would you expect to be better? This is what we do out here.

This is where the culture comes from and the genetics and the people and the operators. And so, all [of] it's super competitive. We think competition breeds excellence, and we're happy to be out here doing what we're doing.

## On interstate commerce and the dormant clause

The dormant commerce clause ensures a farmer that the entire nation is his market, right?

So, what they're saying is you can't say, "I don't want California cannabis," right? That's unconstitutional. Think about what happens, in the national market, when a tariff happens. Is it ever just one way? No. It's a tariff war. So, if Florida says, "Hey, we don't want California weed because we have weed growers," what are the odds that California is going to say, "We don't want Florida oranges because we've got orange growers"? So, those things are all equivalent.

## Applying Big Agricultural technologies to cannabis

Agriculture is doing things well, and we are some of the first ones to apply it to cannabis. Our ebb and flood floors? We have a bay there. We harvest about 28,000 plants a week, which means we need to veg and replant 28,000 plants. So, if you think about that, there's kind of three ways you could do that.



**Graham Farrar, President at Glass House Brands**

You could irrigate it from the top, but that's bad for pathogens and inconsistent and high labor. You could put emitters in it, but 28,000 times in and 28,000 times out? That is a ton of resources. Or you can use an ebb and flood floor, which is basically a two-inch-deep swimming pool. So, what we do is we flood this floor up, and the plants absorb all the water they need from the bottom—totally consistent, zero labor.

It's automated, and then, when they're done, we're done. They drain the water back off. We capture the water and the fertilizer—both expensive and valuable commodities, both for business and for the environment. We clean it and then we put it on the bay next to it.



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



# The Dime Listen Now

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

## How Green Flowers got universities to adopt cannabis educational programs

What I learned is that once you get a few people on board, schools are like sheep. They end up following the pack. And so, we knew that if we could get a few of these over the line, it should create this “domino effect.” So, we started in 2017, got laughed out of every room all the way until 2019. Years of approaching schools and going through this process and [...] we got really close with one school, and then the president, at signature, killed it.

It was heartbreaking, especially being our first one. Months of diligence and then, yeah, killed literally at the last possible second that we thought [it] was going to signature. And then, finally, in 2019, one of our investors—I don't know if he was on the board or just really close to the board at Florida Atlantic University in Florida—personally vouches for us, and they say, “Oh sure. What the hell, We'll give it a try.”

## On the Ganjier Program

It's really tricky. Although the instructors are truly the most experienced cannabis people on earth, there's not a large group of people that have been doing this for 10 [or] 20 years in the legacy space or in [the] Prop 215 environment in California who have also transitioned to being such major players in legal space.

That's the thing:[...] you have to hold both things in cannabis. You must hold the love, the culture, and the legacy—all that stuff. And the fact that we're in a newly regulated legal market? That's a totally different environment.

So, these 18 people are coming from that legacy background but participating in this space. Swami Chaitanya is one of the judges who's been judging the Emerald Cup for 18 years, and he's the one doing the assessments. You can challenge Swami's assessments—you can—but who's more qualified than him?



**Max Simon, CEO at Green Flower**

## On the power of the cannabis plant

All these last 80 years of stigma and [the] war on drugs and all this other stuff, and then today, some scientists walked in and discovered this plant and then brought it to the lab and started researching it—should be celebrated as the single greatest medical discovery of the 21st century.

So, you're telling me this plant helps me sleep, helps me relax, helps me be creative, helps me connect to spirituality, can have measurable effects on cancer, can have measurable effects on depression, measurable effects on anxiety, measurable effects on spasticity, measurable effects on epilepsy? You really start to go down [the list, and] you realize it's [...] one of the most incredible plants that exists on planet Earth.



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

## Missouri's Rapid Cannabis Ascent

By Marc Brandl

On election day the Show-Me state and Maryland joined a growing list of US states where recreational marijuana is now legal for adults. In a move that can only be viewed with envy by cannabis operators in New York state officials have announced an ambitious goal of starting recreational cannabis sales by February 2023.

Missouri voters approved Amendment Five with a comfortable 53% of the vote on November 8th. It's been only two years since the first medical cannabis dispensary opened its doors on October 17th, 2020. If sales do indeed begin in February, it will be the fastest turn around from the start of medical cannabis sales to recreational sales beginning of any state program by some distance. Arizona quickly converted its medical market to recreational sales after voters approved an initiative in 2020; sales began by end the January but had a mature medical market in existence for many years previous.



What will the new market look like for cannabis operators?

## Missouri's Rapid Cannabis Ascent

by Marc Brandl

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194 medical dispensary licenses approved to operate with 182 currently operational in geographically divided into eight districts around the state. Existing medical marijuana dispensaries will also be first in line to start serving adult consumers with dual licenses. Applications open on December 8th and officials have 60 days to approve or deny.

The Missouri Division of Cannabis Regulation under the Department of Health and Senior Services will also be accepting applications in June of 2023 for 144 micro-business licenses. These licenses will be determined through a lottery system, with priority given to low-income applicants and people who have been disproportionately impacted by drug criminalization.

A maximum of 62 cultivation facilities and 88 manufacturers will be initially permitted under the law.

The initiative will impose a six percent tax on recreational cannabis sales.

Regulators can create rules around advertising, but they cannot be any more stringent than existing restrictions on alcohol marketing.

Local jurisdictions will be able to opt out of permitting cannabis microbusinesses or retailers from operating in their area if voters approve the ban at the ballot.

Midwestern Cannabis Powerhouse?

Missouri's medical cannabis program brought in just over \$160 M in total sales in its first twelve months of operation and quickly accelerated from there. As of September 2022, another \$378 M had accumulated. Projections vary but most expect Missouri to exceed total sales of \$1 Billion within three years of adult use sales beginning.

Tourism and out of state residents

Illinois shares a large border with Missouri and since opening its cannabis market consistently reports more than 30% of its sales are from out of state residents from surrounding prohibition states. More than half of Kansas residents live near the border with Missouri with no legal access to cannabis. Iowa, Kentucky and Tennessee fall into the same category. Each of these states has debated and so far turned down the opportunity to legalize medical or adult cannabis – will Missouri's successful cannabis marketplace show them the way?

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# Jurisdiction Roundup

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## Federal

Congress will hold a hearing to examine the benefits of decriminalizing cannabis at the federal level which includes “addressing racial disparities in the criminal justice system, improving treatment options for veterans, and allowing cannabis companies to access traditional banking services.” The hearing follows President Biden’s announcement last month, to issue a pardon to individuals convicted of simple possession of cannabis under federal law and review the scheduling of cannabis under the Controlled Substances Act.



## Humboldt, California

The Humboldt County Board of Supervisors has suspended Measure S, eliminating the County’s tax on cultivation for two years. At the November 1st meeting, Supervisors voted (3-2) to suspend tax payments for the cultivation year 2022, billing them for 2023, and for the cultivation year 2023, billing them for 2024. Additionally, all outstanding payments are deferred until October 2023, with related penalties waived.

Increased concern over the high rate of tax delinquency, believed to be the result of over-taxation and overregulation of the cannabis industry, was influential in the decision to temporarily eliminate the tax, which was previously reduced by 85% in early 2022.



## Missouri and Maryland Go Green

Voters in both Maryland and Missouri have approved initiatives legalizing adult-use cannabis, following this year’s midterm elections. Adult-use sales could begin as soon as July 1, 2023, for Maryland citizens over the age of 21, and as soon as February 6, 2023, for Missourians. Missouri’s Marijuana Legalization Initiative calls for the automatic expungement of criminal records for low-level cannabis offenses, whereas Maryland legislation passed in the spring addresses the reduction of marijuana-related possession penalties and sentences.

# INTERNATIONAL UPDATE

## United Kingdom

Isle of Man medicinal  
cannabis dispensing trial  
starts next month

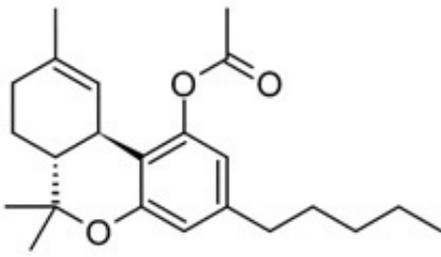
## Germany

Germany's plan to legalize  
recreational marijuana hits  
potential hurdle

## Czech Republic

Czech Republic on the way to  
legalizing cannabis

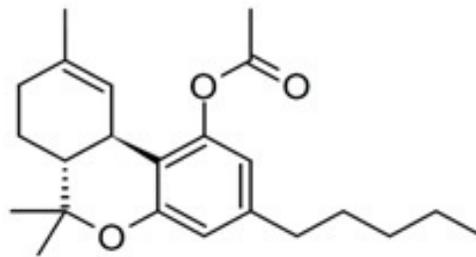
## Minor Cannabinoid Wholesale Pricing



Industry Name: THC-OAcetate

CAS Number: 23132-17-4

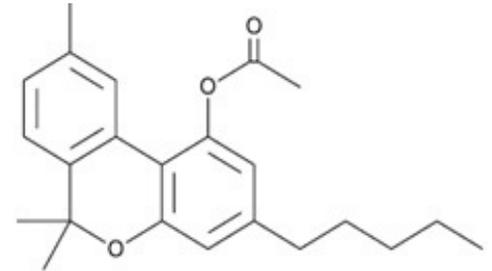
IUPAC: (6aR,10aR)-6,6,9-trimethyl-3-pentyl-6a,7,8,10a-tetrahydro-6H-benzo[c]chromen-1-yl acetate



Industry Name: HHC Acetate

CAS Number: 6692-85-9 (racemic)

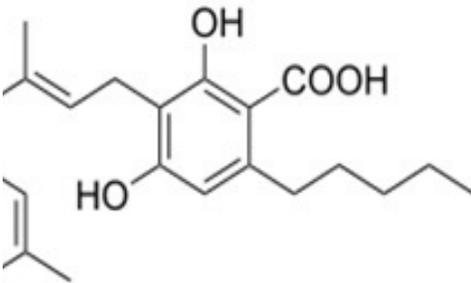
946512-74-9 (6aR,10aR)  
IUPAC: (6aR,10aR)-6,6,9-trimethyl-3-pentyl-6a,7,8,9,10,10a-hexahydrobenzo[c]chromen-1-ol



Industry Name: CBN-O Acetate

CAS Number: 51895-51-3

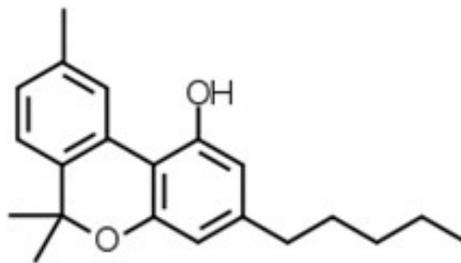
IUPAC: 6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol, 1-acetate



Industry Name: CBGA

CAS Number: 25555-57-1

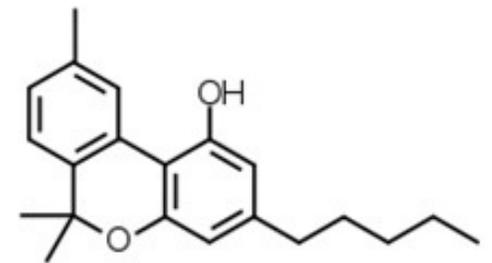
IUPAC: 3-[(2E)-3,7-Dimethylocta-2,6-dien-1-yl]-2,4-dihydroxy-6-pentylbenzoic acid



Industry Name: CBDA

CAS Number: 1244-58-2

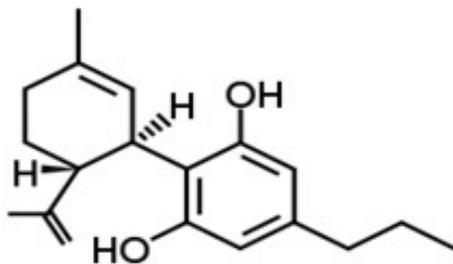
IUPAC: 2,4-dihydroxy-3-[(1R,6R)-3-methyl-6-(1-methylethenyl)-2-cyclohexen-1-yl]-6-pentyl-benzoic acid



Industry Name: CBN

CAS Number: 521-35-7

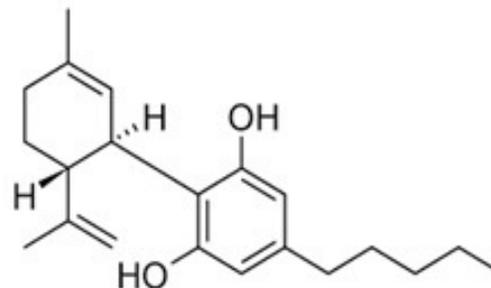
IUPAC: 6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol



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

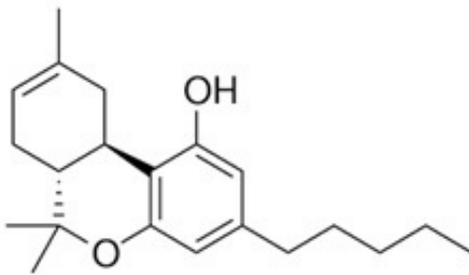


Industry Name: CBD

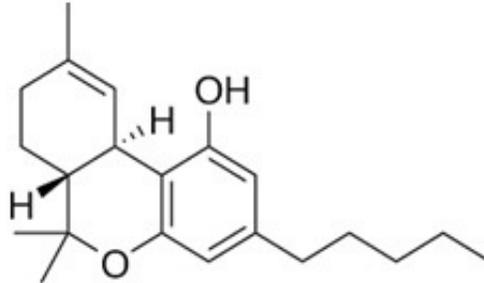
CAS Number: 13956-29-1

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

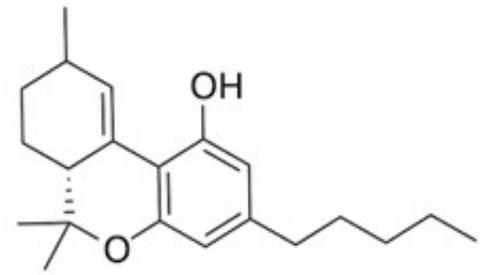
## Minor Cannabinoid Wholesale Pricing



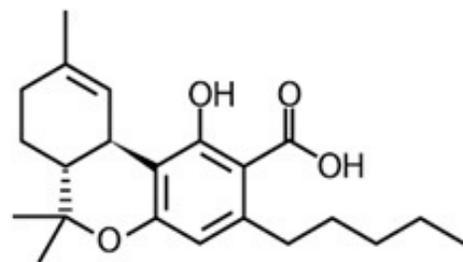
Industry Name: Δ8-THC  
CAS Number: 5957-75-5  
IUPAC: 6aR,7,10,10aR-tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol



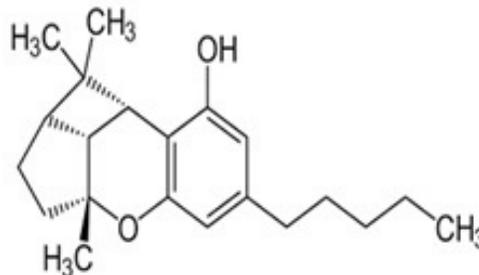
Industry Name: Δ9-THC  
CAS Number: 1972-08-3  
IUPAC: 6aR,7,8,10aR-tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol



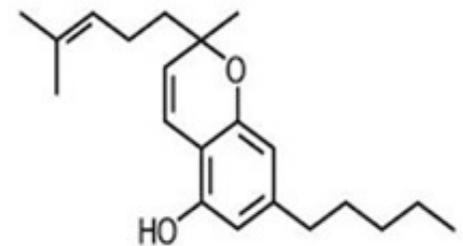
Industry Name: Δ10-THC  
CAS Number: (6aR, 9S) 95588-87-7  
IUPAC: (6aR-trans)-6a,7,8,9-tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol



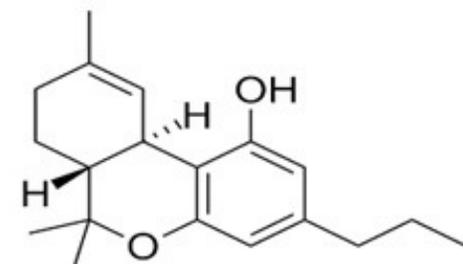
Industry Name: THCA  
CAS Number: 23978-85-0  
IUPAC: 6aR,7,8,10aR-tetrahydro-1-hydroxy-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-2-carboxylic acid



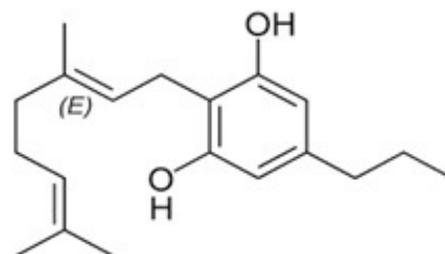
Industry Name: CBL  
CAS Number: 21366-63-2  
IUPAC: (1aS,1a1R,3aR,8bR)-1,1,3a-trimethyl-6-pentyl-1a,1a1,2,3,3a,8b-hexahydro-1H-4-oxabenzofuro[3,4-c]indeno[1,2-b]indene-8-ol



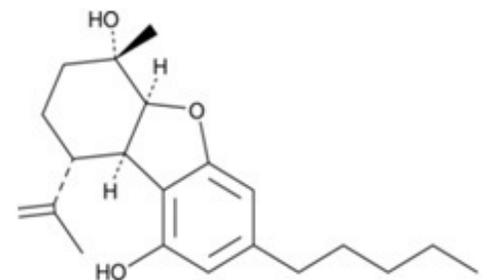
Industry Name: CBC  
CAS Number: 20675-51-8  
IUPAC: 2-methyl-2-(4-methyl-3-penten-1-yl)-7-pentyl-2H-1-benzopyran-5-ol



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

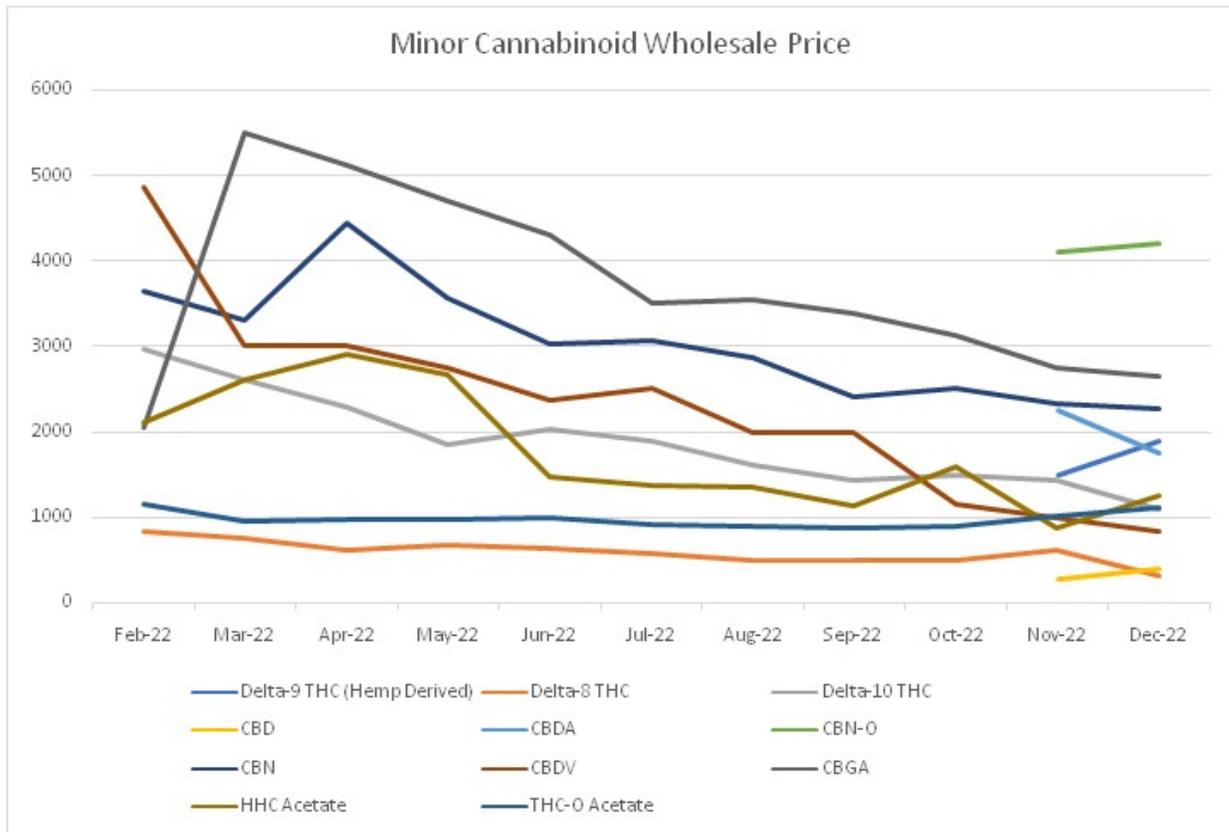


Industry Name: CBGv  
CAS Number: 558224-11-8  
IUPAC: 2-[(2E)-3,7-dimethyl-2,6-octadien-1-yl]-5-propyl-1,3-benzenediol



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-dibenzofurandiol

## Minor Cannabinoid Wholesale Pricing



We have recently started reporting on FDA-compliant Delta-9 THC distillate, CBDV, and CBN-O. Our firm will continue to add cannabinoids as we see them gain in popularity and volume in the marketplace. Volatility within the minor cannabinoid market continued this month. CBDV prices dropped 17%, and HHC acetate prices jumped 43%. The most stable cannabinoid from a wholesale price perspective in 2022 has been THC-O. Market prices in February were \$1,150 / kg. Currently, the price hovers around \$1,116 / kg.

One of the more exciting developments in the cannabinoid market is underway in Minnesota, where THC derived from hemp is being infused in beverages and sold at regular retail outlets. Minnesota could have massive implications on demand for all minors. We will closely monitor how regulators handle the current Minnesota THC beverage industry. The use case and marketplace for end products containing minor cannabinoids are still emerging. Every emerging market has its growing pains, and price volatility will continue until established use cases and finished consumer products are created. \*Disclaimer\* The reported pricing is based on market observations.

# The Next Wave in Cannabis

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The next wave in cannabis cultivation, extraction, manufacturing, formulation, fulfillment, and retail will adopt automation to improve efficiency. Companies with improved efficiencies will be able to provide high-quality products to consumers at lower price points, ultimately gaining more market share and pushing out companies that can not compete at the same price point.

According to Boston Consulting Group, the technologies that will allow for the ‘smart factory’ include the following:

- Additive Manufacturing
- Augmented Reality (AR)
- Autonomous Robotics
- Big Data Analytics
- Blockchain
- Cloud Computing
- Cybersecurity
- Digital Twins
- Human Machine Interface
- Internet of Things
- IT System Integration
- Process Analytical Technology (PAT)
- Quality by Design
- Virtual Reality

Together these technologies create the concept of the ‘Smart Factory,’ a term coined in Germany around 2011. These technologies will reduce the cost and time for product development, enable mass customization, and reduce production costs, all while improving quality. Over the next year, we will cover the areas where the technology is currently being used in the industry, up-and-coming technology starting to emerge, and future concepts on the horizon.

Throughout 2023, 8th Revolution will cover each technology in detail and provide examples of how cannabis companies can adopt the technology and the expected economic value.

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## SECTOR ANALYSIS\*

INDICES	3 MONTH%	6 MONTH %
S&P 500	16.67%	21.52%
DOW JONES	2.96%	4.84%
NASDAQ	-14.61%	-10.06%
 GLOBAL CANNABIS	-10.36%	-34.13%
AMERICAN CANNABIS	-1.80%	-19.82%



### According to Bloomberg, "Nasdaq Objection to Canopy's Big Deal Shows Pot Stocks' Lingering Risks"

\*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	31.34%	36.24%
TECHNOLOGY SECTOR	-8.42%	-3.48%
INDUSTRIALS	1.83%	9.43%
FINANCIALS	2.51%	3.56%
CONSUMER CYCLICAL	-9.25%	1.73%
CONSUMER NON-CYCLICAL	1.97%	4.90%
BASIC	4.72%	-4.69%
ENERGY	9.56%	7.26%
UTILITIES	-7.82%	-2.13%
 ALTERNATIVE HARVEST ETF (MJ)	-13.11%	-26.10%
MULTI-STATE OPERATORS (MSOS)	-15.44%	-21.39%

\*Information retrieved from NCV and E\*trade.

# The Dosing Project

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## THC and the Cannabis Mind Initiative

For too long, societies worldwide have prohibited Cannabis, a historically useful and valuable commodity. The predominant concern has been Cannabis delta-9-tetrahydrocannabinol (THC) content and its psychoactive effects. How does THC affect mental states? Is it beneficial? What are its liability concerns? CESC's Cannabis Mind Initiative focuses on the psychoactive or intoxicating effects of Type I (THC dominant) Cannabis and its subtypes of varying potencies.

Cannabis typically contains one of two dominant phytocannabinoids, THCA or cannabidiolic acid (CBDA), and several combinations of other active ingredients. Consumers might inhale, apply, or ingest a product without apparent psychoactivity. However, it is the use of THC (derived from its THCA precursor) in products that most often leads to intoxicating states. THC's psychoactive effects are mostly attributed to its activity on CNR1 (CB1), a prevalent G-coupled protein receptor in the brain. THC consumption may cause adverse effects; however, it also leads to meaningful subjective experiences. Despite a diverse and rich potential for Cannabis in the marketplace, THC is the elephant in the room. CESC's study of THC dominant Cannabis addresses its psychoactive and intoxicating effects.

In the past decade, we have seen unprecedented shifts in the availability of Cannabis. Increased access to Cannabis has been associated with an increase in high potency THC products. From 1995 to 2014, THC potency tripled (4%-12%) in confiscated Cannabis flowers. Today, markets sell Cannabis flowers with 20% or more THC content. Extracted and concentrated oil products have potencies of 50-80% THC. Jurisdictions that have tried to prohibit D-9 THC see legal hemp products converted to other isomers of THC as companies work around regulations to offer a product with more psychoactivity.

Americans have a love-hate relationship with Cannabis. Harry J Anslinger, head of the US Treasury Department's Narcotics Bureau, wrote his opinion in a 1937 article titled *Marijuana, Assassin of Youth*. "How many murders, suicides, robberies, criminal assaults, holdups, burglaries and deeds of maniacal insanity it causes each year can only be conjectured." The ludicrous notion that a plant could initiate such behavior had been popularized in a movie called *Reefer Madness*. Relative to the history of worldwide use, Anslinger's perspective didn't last long. By the 1960s, Anslinger had already conceded that the criminal penalties in force for Cannabis use were too severe. In 1967, mainstream voices of *Life*, *Newsweek*, and *Look* magazines questioned why the plant was illegal at all. By 1996, California had legalized Cannabis use for medicinal purposes through a proposition titled The Compassionate Use Act.

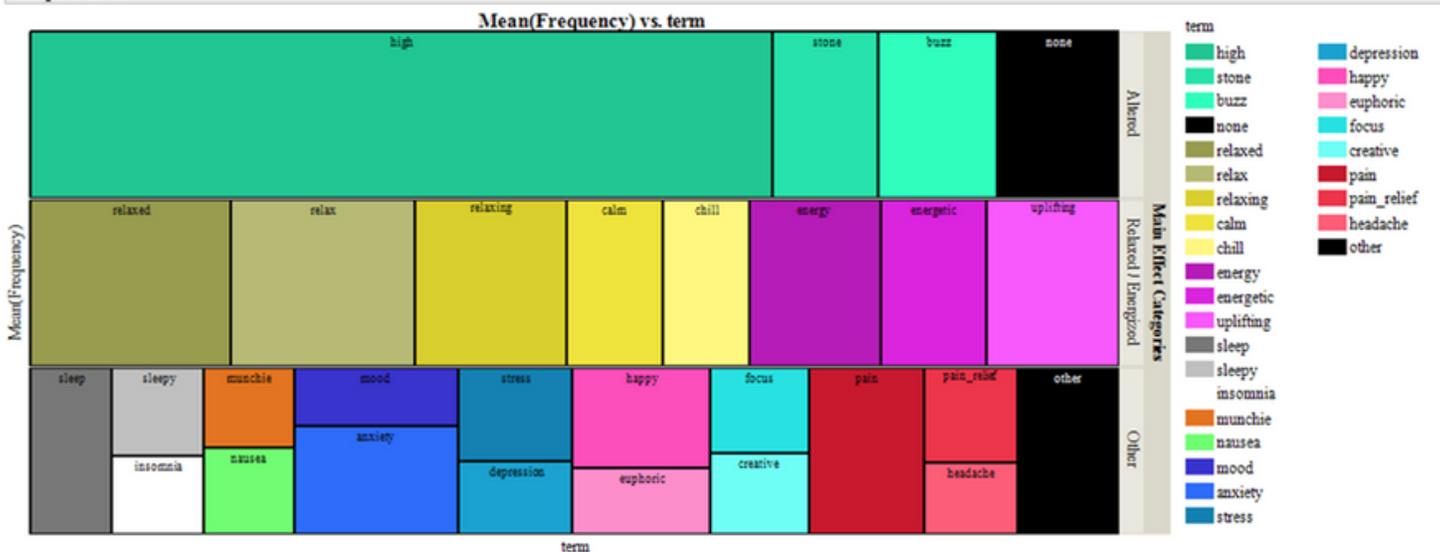
Contrasting perceptions and opposing effects are a hallmark of Type I Cannabis. The relaxing and euphoric effects are contradicted by concerns of anxiety and psychosis. It's well understood that acute psychosis from THC can be debilitating, especially when unexpected. Dr. Nora Volkow, Director of the National Institute of Drug Abuse, notes that high potency Cannabis

# The Dosing Project

## THC and the Cannabis Mind Initiative

products are associated with acute psychosis. However, intentional Cannabis experiences with appropriate doses of THC can also be used as therapy. The hypothesis is that THC may help expand the walls of perception and engender psychological flexibility, which leads to improved mental health conditions.

In a Natural Language Processing analysis of open-sourced reviews by respondents that used Type I Cannabis flowers, CESC identified commonly used words. These descriptors group into three categories; states of altered consciousness (high, stoned, buzzed), a relaxed-energetic dichotomy, and a broad range of psychosomatic states. We anticipate that this categorization scheme will facilitate correlation with underlying pharmacologic mechanisms.



The frequency of descriptors maps subjective states of the “Cannabis Mind”. The results depict a range of effects describing a more complex experience than acute psychosis or the anticipated ‘high’.

With access to a Northern California community of 2,000 active users, CESC investigates the risk factors and therapeutic benefits of Type I Cannabis use. Data is gathered on the acute and chronic effects of Cannabis use. Longitudinal observations track health and wellness endpoints of Cannabis users. Quantitative EEG analysis provides an objective biomarker in comparisons of subjective mood and consciousness scales. Our community serves as a model in our investigations of the “Cannabis Mind.”

The [CESC](#) is a non-profit organization that relies on community support for its ongoing investigations.

[DONATE to Cannabis Science](#)

For more information visit the [CESC](#) at [www.thecesc.org](http://www.thecesc.org).

# HOT IN THE NEWS

December 2022

- At Thanksgiving, There's No Need to Go Outside for a Smoke**
- Will 'SAFE Plus' Add Up To Marijuana Justice For Communities Harmed By Prohibition? (Op-Ed)**
- Biden Will Sign Bipartisan Marijuana Research Bill Passed By Congress This Week, White House Says**
- New York Approves Firms To Build First Social Equity Marijuana Dispensary Storefronts Days Before Key Regulators Meeting**
- Expect cannabis banking reform, market consolidation in 2023, MJBiz CEO says**
- Will New York's adult-use marijuana retailers open by year's end?**
- Sean 'Diddy' Combs to buy Cresco, Columbia Care marijuana assets for up to \$185 million**



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