



EIGHTH
REVOLUTION



ARCVIEW
CONSULTING

Cannabinoid MONTHLY PLAYBOOK

July 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

Welcome to the Revolution



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IN THIS ISSUE

July 2022

The cannabinoid industry has been a victim of the same forces

Kellen Finney, Eighth Revolution

The cannabinoid industry has been a victim of the same forces influencing other markets with stocks down month over month and wholesale cannabinoid prices down from the THC markets to the CBD markets. Another key factor to keep an eye on for manufacturers will be the steady increase in future ethanol prices. Ethanol has experienced a 14% increase since January, and with it being a key solvent in most industrial-scale CBD and some THC manufacturing operations, we expect operators to be in challenging times. A decrease in wholesale prices coupled with increases in key inputs is never a good scenario. Managing supply chains, staying informed, and running efficiently during these times will be more crucial than ever as the industry continues to develop.

Layoffs are around us

Bryan Fields, Eighth Revolution

Due to dramatic market shifts, companies are finding ways to reduce burn. Unfortunately, one of those ways is layoffs. Times are even more challenging than usual in Cannabis with the current economic climate. Sadly, we have heard of other companies that will likely follow EAZE and Dutchie with layoffs. **Focus on driving value for your north star** and on helping your customers be even more successful during uncertainty.

“

**BDSA expects
New Jersey to be
the third largest
contributor
to the overall U.S.
cannabis sales
growth by 2026**

Are Social Equity Licensees Set up to Fail?

Jason Wild, Chairman of TerrAscend, is no stranger to making headlines. Last month on *The Dime*, he said:

"If you're a retailer in an under-supplied market, you're always going to be at a disadvantage because you're only going to get products from the other players that are vertical."

On the surface level, nothing controversial. Standard supply and demand in newer, limited license markets will also lead to limitations on organizations that can be cut out of key supplies or ingredients.

Chris Becker (@Chris_honeybee) had a different perspective on the quote, and it really got me thinking. [This is the link for the full conversation.](#)



Chris Becker 🐝
@chris_honeybee

...

Here the CEO of Terrascend @JasonGWild eloquently explains how "social equity" dispensary licensees are being set up to fail in limited license states (listen to the end).

Are social equity dispensary licensees being set up to fail in limited license states? Should an industry's expectations be that all operators play on an even playing field, and whose responsibility is all of this to advocate for fairness? States claim that they want to right the wrongs of the past and help minorities, as well as push for social justice, but how is that possible given the limitations to access to capital and current market conditions?

Is that Jason Wild's and other Mso's fault? No, definitely not. While some of the larger titans might help to influence their local politicians for limited license states (a different conversation), they (the MSOs) should not be held directly accountable for how the game is set up. Politicians and those writing the rules to limit the number of participants in the market are the ones that should be in the crosshair when figuring out what is fair or unfair.

So, what do we do, Bryan? Great question, glad you asked.

We open licenses and no longer limit them. Placing limits on licenses leads to corruption and bribery (my assumption). I have no proof, but it's easy to assume that limiting golden tickets allows the game to not be fair for all interested parties. Opening license caps will likely have a ton more businesses enter the industry, which will also have a massive amount of them likely failing. Sadly, this is part of a free market, and not everyone deserves a trophy or generational wealth for participating. Survival of the fittest is exactly that. Supply and demand will hopefully find an equilibrium.

The end goal is to have a fair, open supply chain that may be dictated by a few big players, but that doesn't restrict the supply and demand of product moving into the space. Limits on products and licenses make it extremely hard for smaller, mom-and-pop shops to survive.

Below you can find the full version of the Jason Wild quote:

"If they have extra product, they're willing to sell to you. So, during the best times, when the market is early on, there's the most demand relative to supply. You're at a major disadvantage if you're only all retail, and you're also at a disadvantage if the market gets more mature."

I encourage you to listen to the entire conversation or read the interview [here](#). This way, you can at least be informed on the complete context of his statement before you go and attack big MSOs.



The Dime



 Listen Now

A weekly podcast covering the entire Cannabis Industry.

[00:07:02] On Nabis' earliest business plan

It comes back to just what the customer needs. And back then, we didn't have our B2B marketplace. We didn't build a Nabis Capital Solution. We didn't build analytics tools. We just built a website to help people enter orders in that we would deliver and fulfill. We'd collect payments for them and that's what people needed. They didn't need some fancy software, they didn't need AI. They just needed some way to deliver their products from point A to point B compliantly and get paid. We would do the deliveries ourselves just to give that sort of high-touch experience and build a relationship directly with the execs at these companies. They just needed more tools that help them at scale, so that's how we started to build out and flesh out the rest of our platform, and that's what currently exists today.



Vince Ning, CEO of Nabis

Because you're still paying the same taxes but making less money, we've heard cultivators saying that they're paying up to about 40% of what they have as their revenue in cultivation tax alone, not to mention all the labor costs and the actual cost to produce this product.

[In the legal cannabis industry] what operators will have to do is increase pricing to make their ends meet and who ends up bearing the cost is actually the consumer. And so when the consumer goes and buys weed, they will choose to buy from the illicit market because there are no taxes being applied to their own [production] and costs, and it's oftentimes the same quality product.

[00:17:45] On the challenges that face some of the California cannabis operators

I'll say that the biggest challenge right now is just incredibly high taxes. The problem is it's actually starting at the top of the supply chain with cultivators. Ever since the inception of the California market, there's been a cultivation tax. An excise tax and cultivation taxes were charged based upon the weight of the flower that was produced.

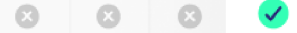
After last year, there's been this overproduction, oversupply, of flower that are coming into the world. The average price per pound has fallen significantly, but the weight is still the same, if not more. What ends up happening is the taxes don't fall in line with the average price per pound.

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



Jurisdiction Roundup

Powered By 



The Fyllo Regulatory Database creates unparalleled visibility at every level of government with access to more than 800,000+ files and entries addressing regulations across the United States. Today's leading MSOs, SSOs and law firms rely on Fyllo to accelerate research, track licensing opportunities and make better decisions. To learn more or schedule a demo, please visit hellofyllo.com.



California

A bill affecting cannabis packaging and labeling regulations was referred to the Assembly Committee on Business and Professions on June 2. The Cannabis Right to Know Act, [SB 1097](#), which has already passed the Senate, would add additional warning labels to product packaging, require new users to be given an informational brochure and update policies for advertising. New consumption risk warning phrases would be implemented via a rotating batch approach and address pregnant users, teenagers and children, mental health issues and driving under the influence. Critics of the proposed measure say these issues are already covered under current law. If approved by the House, SB 1097 would go into effect between January 1, 2024, and January 1, 2025.



Louisiana

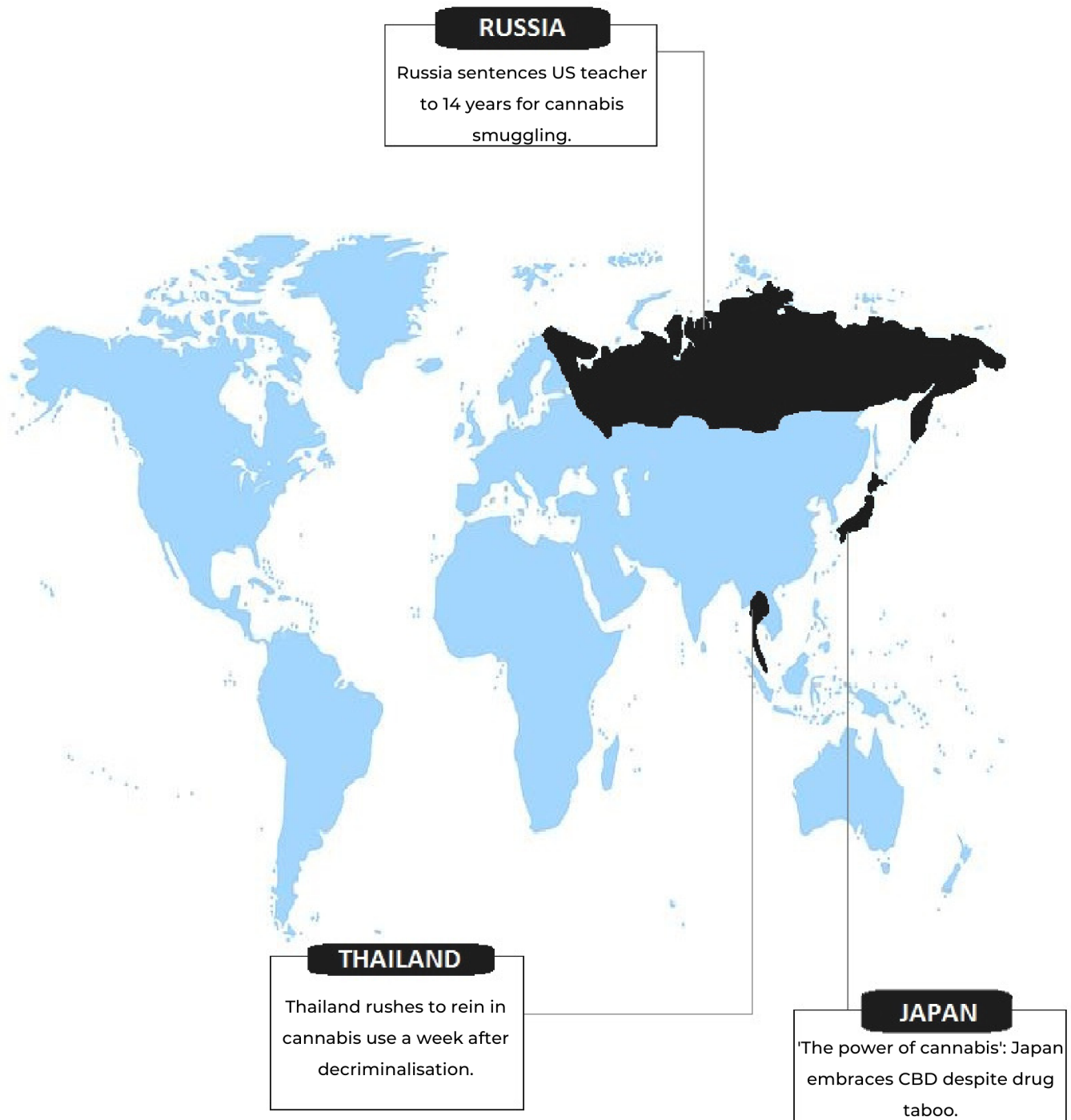
Louisiana lawmakers have passed [House Bill 697](#) to allow a tenth medical cannabis pharmacy license to operate in the state. Additionally, the measure would authorize the nine existing retailers to open a second and third location once each is serving 3,500 patients, with a maximum of 30 dispensaries permitted state-wide. If a license holder declines to open one of their allotted pharmacies, then a new licensee may be selected by state regulators. The bill, which also transfers regulation of the industry from the Department of Agriculture and Forestry to the Louisiana Department of Health, now awaits Governor Edward's signature.



Pennsylvania

Pennsylvania lawmakers have advanced a medical cannabis [tax relief amendment](#) through the House Finance Committee. The measure would allow cannabis businesses, like other industries, to file state tax deductions for expenses. It is intended as relief from section 280E of the Internal Revenue Service federal tax code, which currently prevents businesses that work with controlled substances from taking certain deductions. In April, the Pennsylvania [Senate passed a banking bill](#) protecting state financial institutions from penalties for working with medical cannabis businesses. It has yet to pass the House.

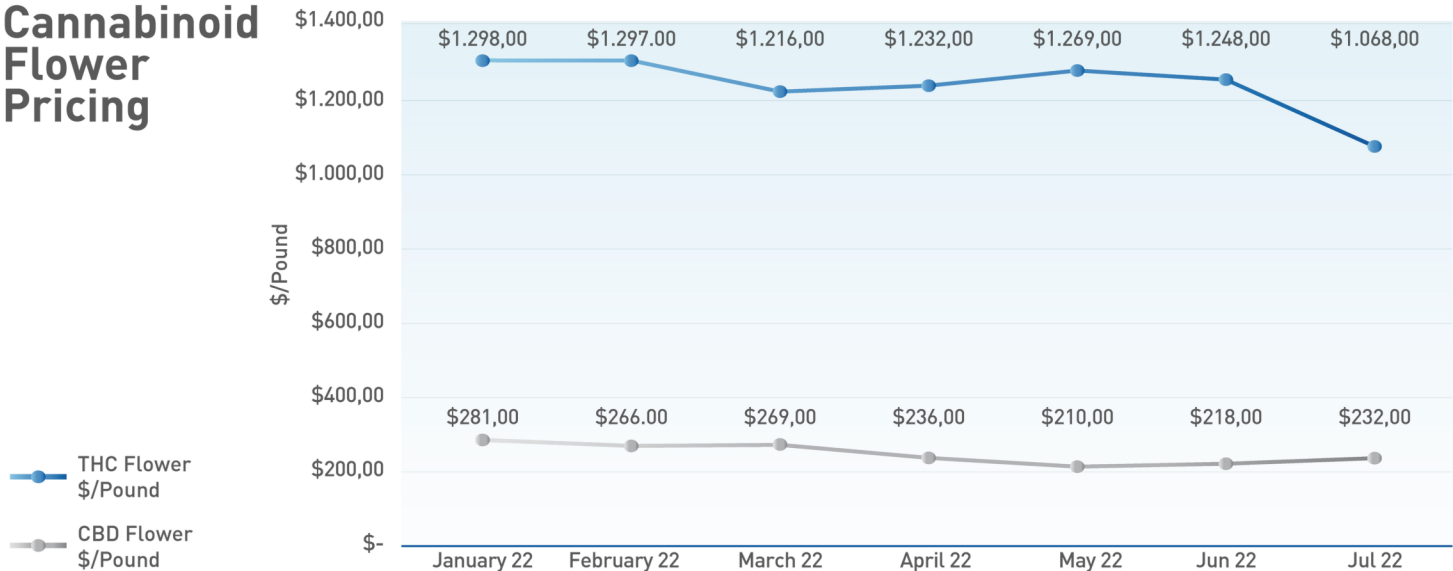
INTERNATIONAL UPDATE



WHOLESALE FLOWER PRICING

CBD vs. THC Flower

Cannabinoid Flower Pricing



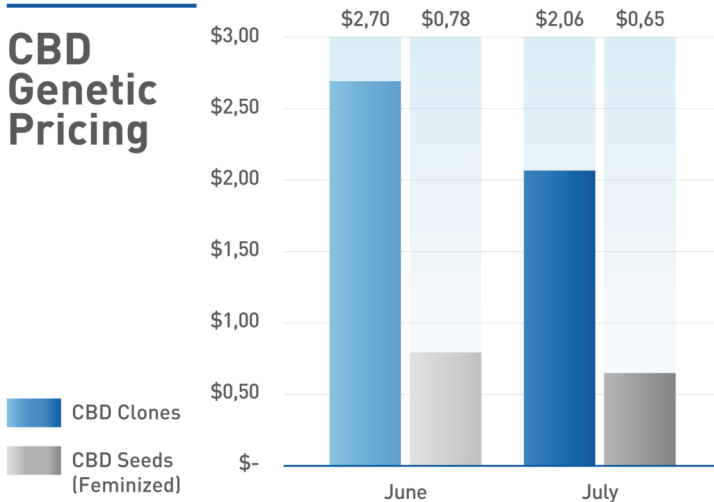
The average national spot price for smokable THC flower as reported by Cannabis Benchmarks fell to \$1,068 / lbs, dropping 14% since last month. The price drop is attributed to key markets, such as Michigan and Arizona, that are currently experiencing more operators start to come online, resulting in biomass saturating the market. Once larger markets like New York come online with their limited license models we believe the wholesale flower prices will stabilize for the THC industry.

The average national spot price for smokable CBD flower rose to \$232 / lbs., increasing 6% from the previous months observed price. The smokable CBD industry might be one of the most interesting markets to watch over the next five years. Our firm believes there is a significant upside to this product category based on a few factors. First, a smokeable CBD cigarette is technically the only legal CBD hemp product federally. This is in part due to every other consumer-based product (tincture, powder, cream, edible, vape pen, etc.) using extract from the plant that at some point during the process will exceed the national threshold of 0.3% THC. The other factor is as the FDA continues its war on the tobacco industry, more consumers could be driven to alternatives such as CBD cigarettes.

WHOLESALE DATA

WHOLESALE HEMP GENETICS PRICING

CBD Genetic Pricing



Wholesale genetic prices have seen significant price drops over the last two months with CBD seeds falling to \$0.65 per seed and CBD clones falling to \$2.06 per clone. Both categories' price drops were double-digit percentage drops with CBD seeds decreasing 17% and CBD clones decreasing 24% since June.

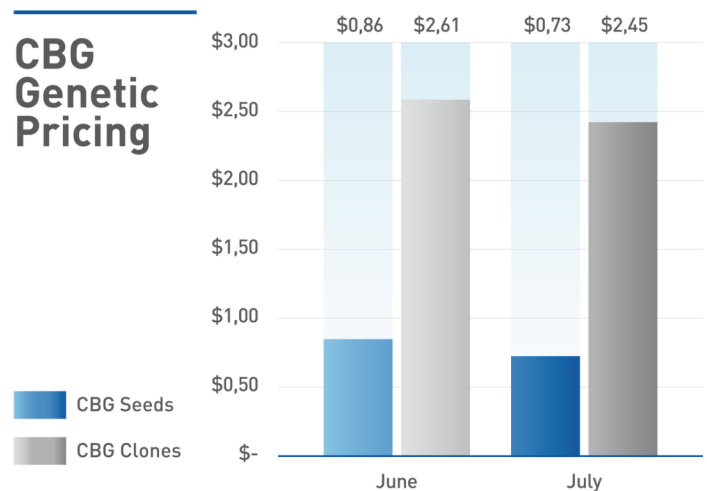
Although the price drops are significant at first glance, they align with decreased demand for the products as most farmers have already planted and the spring surge has ended. We expect prices to continue to decrease steadily for the next two months before stabilizing in September.

CBD Seed prices are
down 17%
month over month



As to be expected the CBG genetics market also experienced a decrease in wholesale genetics prices, although it was not as severe as the CBD genetics market. CBG seed prices dropped 15% to an average price of \$0.73 / seed and CBG clone prices fell 6% to an average price of \$2.45 / clone. The price decrease is due to the same forces being experienced in the CBD genetics market, and lower demand due to the end of the planting season.

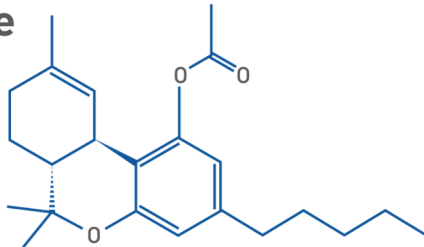
CBG Genetic Pricing



Minor Cannabinoid Wholesale Pricing

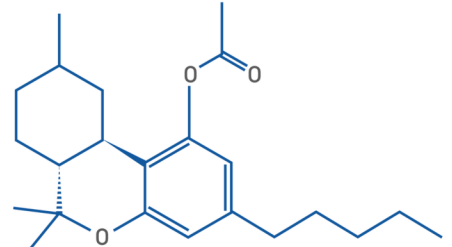
THC-O-Acetate Distillate

June 22
\$ 1000.00 / kg
July 22
\$ 915.00 / kg



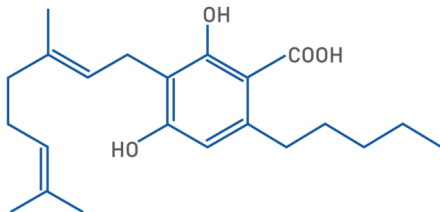
HHC-Acetate Distillate

June 22
\$ 1,466.00 / kg
July 22
\$ 1,362.00 / kg



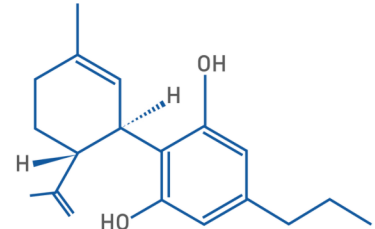
CBGA Isolate

June 22
\$ 4,300.00 / kg
July 22
\$ 3,512.00 / kg



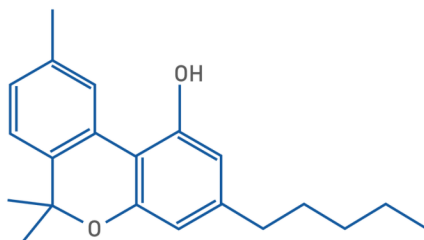
CBDV Distillate

June 22
\$ 2,375.00 / kg
July 22
\$ 2,500.00 / kg



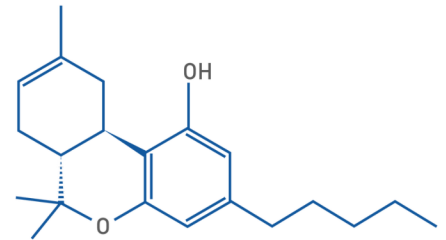
CBN Isolate

June 22
\$ 3,019.00 / kg
July 22
\$ 3,058.00 / kg



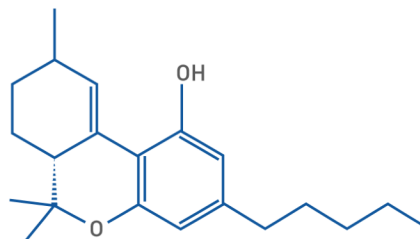
Delta-8 THC Distillate

June 22
\$ 644.00 / kg
July 22
\$ 579.00 / kg



Delta-10 THC Distillate

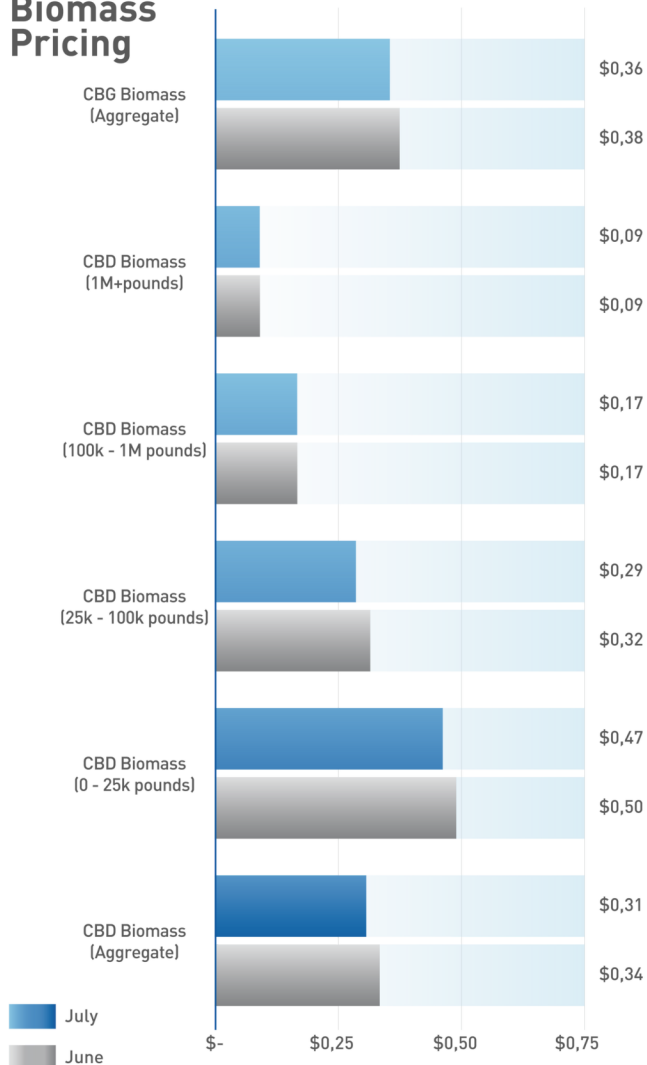
June 22
\$ 2,035.00 / kg*
July 22
\$ 1,890.00 / kg



*Our firm made an error in calculating the average price for D-10 Distillate, the correct price for June should have been \$2,035 / kg

WHOLESALE HEMP BIOMASS PRICING

Biomass Pricing



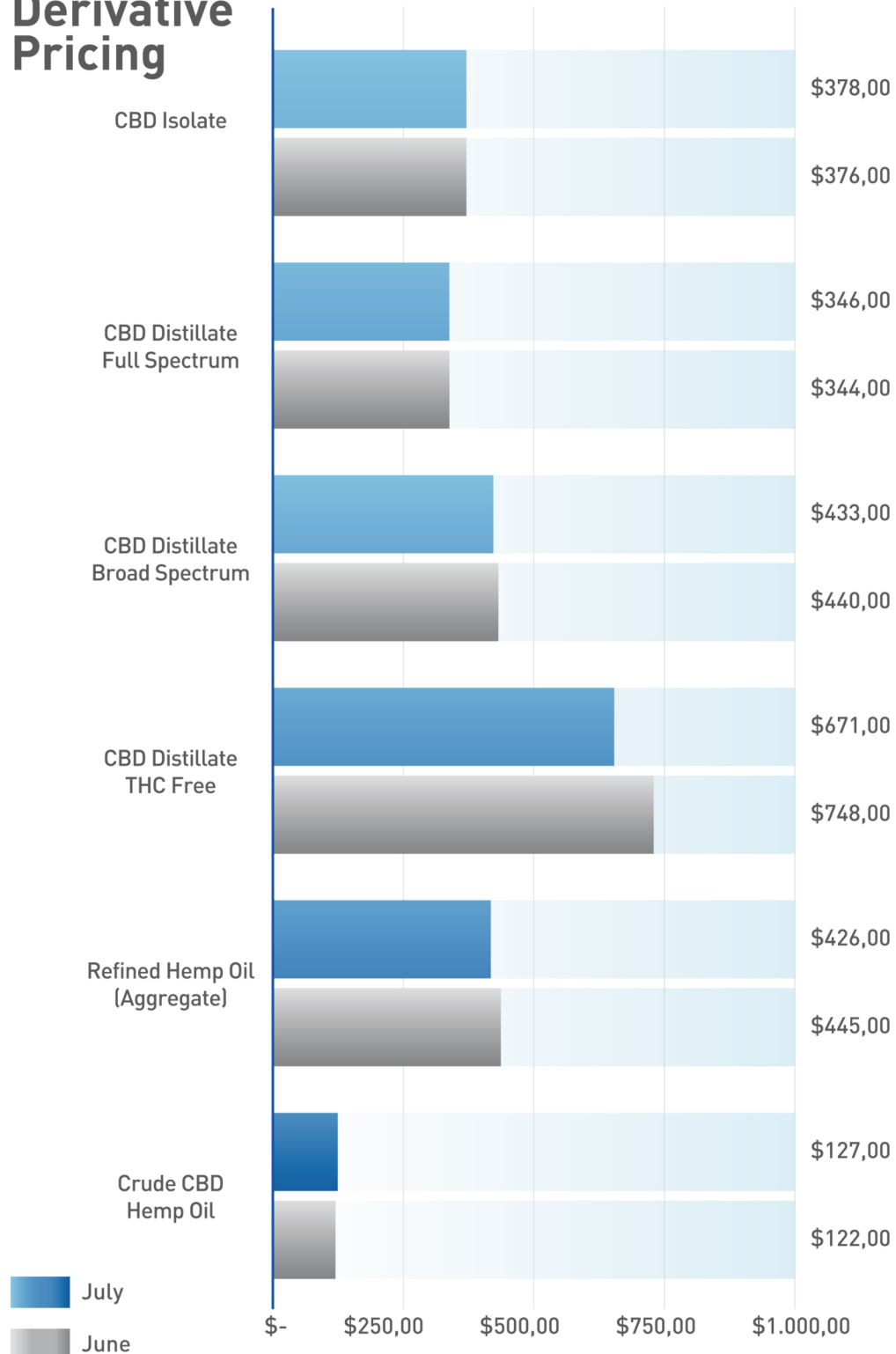
The average price for CBD biomass is currently at \$0.31 / % CBD / lbs., down from last months reported average price of \$0.34 / % CBD / lbs. The price decrease month over month is 9%, which falls in line with the general trend we have seen since January. The price decrease was observed in almost every other product category with only orders of 100,000 lbs. showing stability.

Our firm believes the continued fall of the price is the final correction event before the wholesale market stabilizes come 2023. The reason for our rationale lies in the fact that significantly less hemp was planted this year than in past years, and this paired with several other states bringing on legal cannabis means the markets, widespread adoption of cannabinoid therapeutics will become mainstream. Once cannabinoid therapeutics become mainstream, wholesale demand will pick up, and with it so will biomass pricing.



WHOLESALE DERIVATIVE PRICING

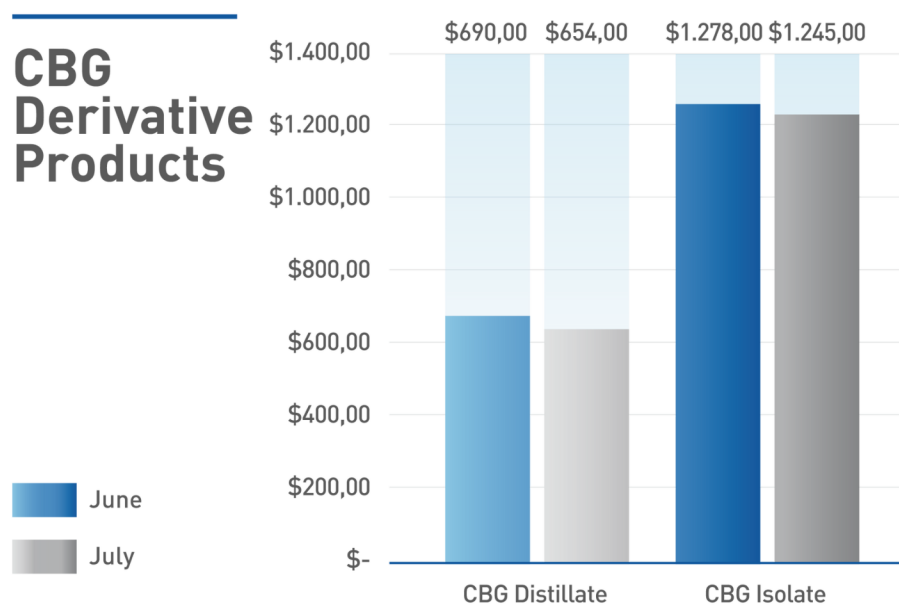
CBD Derivative Pricing





WHOLESALE DERIVATIVE PRICING

The CBD derivative market experienced a volatile past 30 days with some product categories marking slight gains CBD isolate price per kilogram increased \$2. Other product categories saw significant price decreases with the CBD Distillate – THC fee dropping 10%. The price drop in the CBD Distillate -THC-Free category is in line with what our firm predicted last month. One ripple effect most consumers do not realize is the solvents used to remediate CBD distillate's are derived from the petroleum industry. The increased price of crude oil will result in an increase in chemical commodities across the board. The larger chemical markets, especially the ethanol market, will continue to have a significant effect on operators. Future's prices of ethanol on June 23rd rose to \$2.82 / gallon, outpacing the oil markets with a 14% increase.



The CBG derivative wholesale market experienced significantly less volatility when compared to the CBD derivatives market. Our firm observed price decreases in both product categories from last month with CBG Isolate prices dropping to \$1,245 / kg and CBG distillate dropping to \$654 / kg. The minor cannabinoid market overall has been experiencing a slow and steady price drop in almost every product category over the past 12 months. We believe this is in part due to guerilla-style business practices as companies lower prices to gain market share.


SECTOR ANALYSIS*

	INDICES	3 MONTH%	6 MONTH %
	S&P 500	-13.62%	-16.43%
	DOW JONES	-14.17%	-16.43%
	NASDAQ	-23.27%	-30.40%
	GLOBAL CANNABIS	-41.20%	-50.76%
	AMERICAN CANNABIS	-40.55%	-41.09%



According to the WSJ "Investors ask how long the selloff will last after the S&P 500 posts its worst week since March 2020"

*This text expresses the opinion solely 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	-7.24%	-12.93%
	TECHNOLOGY Sector	-21.00%	-26.47%
	INDUSTRIALS	-17.57%	-7.82%
	FINANCIALS	-17.29%	-15.52%
	CONSUMER CYCLICAL	-22.75%	-27.38%
	CONSUMER NON-CYCLICAL	-8.78%	-8.47%
	BASIC	-14.35%	-6.06%
	ENERGY	-0.96%	28.57%
	UTILITIES	-8.40%	-6.49%
	ALTERNATIVE HARVEST ETF (MJ)	-39.03%	-47.30%
	MULTI-STATE OPERATORS (MSOS)	-44.91%	-53.00%

*Information retrieved from NCV and E*trade.

Dealing with a down market – the cannabis industry in perspective

By Marc Brandl

Nowadays, it's tough to be a cannabis operator. Wholesale prices are crashing, there are increasing levels of competition, an ever-changing regulatory landscape, an unfavorable and unsafe tax regime, and a dozen other major thorns on your side. And now we appear to be in or headed towards a global economic recession some macroeconomic analysts are predicting to be quite severe and long-lasting. Inflation, supply chain breakdowns, higher interest rates, low economic growth, and high unemployment are either on the horizon or are already in place..



Is the cannabis market going to make it? Am I going to make it? These are common questions of those in the industry.

While the effects, length or severity of a recession are anyone's guess, there is a silver lining that many other industries can't rely on. New marketing and new customers are coming into the cannabis market regardless of an economic downturn.

Multi-billion-dollar markets are opening on the East Coast: New York, Connecticut and New Jersey are coming online with much pent-up growth. Regardless of the severity of the economic downturn – the size and strength of the cannabis market will continue to grow.

Will we get something positive out of DC in 2022? Maybe. It's always hard and often frustrating to predict positive cannabis legislation passing federally. Pressure and momentum continues to grow on SAFE Banking Act or similar omnibus legislation that falls short of federal legalization passing this year. If passage does occur it will act as a massive stimulus to the entire industry; lowering operating costs and opening up new flows of capital and financial opportunities currently unavailable due to federal legal restrictions.

States are continuing to act and move forward, here are some highlights:

- Rhode Island just legalized adult use cannabis sales.
- Illinois just announced they will double the number of cannabis retail licenses.
- Maryland, Missouri and other states may pass adult use or medical cannabis legislation through the ballot box or state legislatures this year.
- Pennsylvania and other states are acting to provide state level 280E tax relief.
- A three-year cultivation tax holiday is about to kick off in California.
- More and more local municipalities are opening up opportunities for cannabis businesses to establish..

Dealing with a down market – the cannabis industry in perspective

Also don't forget where we've come from. In 2011 the Arcview Group released a first of its kind report on the State of the Legal Cannabis Market in North America –

THE STATE OF THE MEDICAL MARIJUANA MARKETS 2011



♦ A national market for medical marijuana is worth \$1.7 billion in 2011 and could reach \$8.9 billion in five years.

Noted problems in 2011 (sound familiar):

- ♦ Medical marijuana businesses face significant challenges including unfavorable tax status and downward pricing pressure but can expect high growth driven by rising new patient adoption.
- ♦ State regulations and federal policy uncertainty are the largest determinants of market activity and investment around the country.



Historically, it's never been easy to operate in this space.

This was only 10 years ago. Going from \$1.7 to \$24 billion in total sales in a decade is impressive in anyone's book, and we know 2022's total market size will be bigger still. What can we realistically imagine the cannabis industry will look like 10 years from now in 2032?

- Federally legal cannabis market with interstate commerce
- Plant touching companies listed on US stock exchanges
- Major cannabis brands recognizable to most Americans
- Hundreds of billions of dollars in M&A activities
- A \$40 billion+ annual global market in the US, Germany and other markets around the world

In short, a dramatically different US and global cannabis environment will exist. Take the long view on the cannabis industry and you can only be optimistic. What can you contribute to make this dream a reality in your own business, your own cannabis dreams, your own positive cannabis advocacy?

Making Sense of Cannabis Multiples

From March 31 to May 31, the US plant touching operators on my comp table taking the sums on 2022:

- The stocks are down an average of 28% since March 31, while the NASDAQ 100 (growthy tech) dropped 15%, and the Russell 2000 (small cap) dropped 10% and S&P500 (large cap) dropped 9%.
- The Canadian LPs are down 41% since March 31 and 22% in May; the average Canadian LP is trading at 3.9X sales. Remember that I do not deduct the net cash balances since the capital is being invested and FCF is negative, so my Canadian operators look more expensive. Though Cronos has a \$1.1 billion market cap and \$981 million of cash, I doubt that cash will ever be directly returned to equity holders via dividends or buybacks rather than used to fund losses and acquisitions of assets.



MJResearchCo

<https://mjresearchco.com/>
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Priced May 31, 2022

Stock Price Performance

% Total Returns of Stocks Over:

Name	Ticker	May 31, 2022	Past Week	Past Month	Past Year	Month To Date	Quarter To Date	Year To Date	1Q22	Apr-22	Mar-22	Feb-22	Jan-22	% Off 52 Week High	% Off 52 Week Low	52 Week High Date	52 Week Low Date	2021	2020	2019
US-Focused Operators																				
4Front Ventures Corp	FFNT:CN	4.4%	1.1%	-1%	-38%	-1%	-5%	-27%	-21%	-4%	-8%	30%	-34%	-44%	16%	6/2/2021	1/27/2022	10%	95%	-36%
Ascend Wellness	AAWH	-1.7%	-1.8%	-9%	-69%	-9%	-26%	-53%	-39%	-19%	-7%	-6%	-30%	-71%	-4%	6/21/2021	5/9/2022			
AYR Wellness Inc	AYR.A:CN	-5.9%	-2.5%	-17%	-78%	-17%	-52%	-58%	-13%	-43%	0%	-3%	-10%	-79%	24%	7/14/2021	5/10/2022	-37%	147%	-18%
PF Cresco/Columbia Care	CL:CN	3.0%	-3.2%	-14%	-66%	-14%	-35%	-43%	-10%	-25%	-15%	12%	-7%	-66%	3%	5/31/2021	5/27/2022	-33%	41%	-3%
Curaleaf Holdings Inc	CURA:CN	1.2%	-0.1%	3%	-55%	3%	-14%	-29%	-19%	-17%	3%	-4%	-18%	-56%	7%	6/3/2021	5/10/2022	-26%	86%	27%
Glass House - Guidance	GLASA.U:CN	-0.3%	-6.3%	-17%	-65%	-17%	-29%	-1%	30%	-15%	-8%	10%	29%	-71%	9%	6/28/2021	5/11/2022	-62%	3%	
Green Thumb Industries Inc	GTII:CN	-4.5%	-8.8%	-22%	-61%	-22%	-40%	-48%	-17%	-23%	-6%	11%	-20%	-64%	-2%	7/14/2021	5/27/2022	-10%	144%	17%
Jushi Holdings Inc	JUSH:CN	-3.5%	-9.5%	-27%	-68%	-27%	-38%	-48%	-13%	-16%	-23%	-5%	18%	-70%	-11%	6/8/2021	5/16/2022	-45%	335%	
The Parent Company	GRAM.U:CN	2.7%	5.6%	-10%	-81%	-10%	-8%	-19%	-9%	2%	-13%	-3%	8%	-82%	-7%	6/7/2021	1/24/2022	-86%	4%	
Planet 13 Holdings Inc	PLTH:CN	8.5%	7.9%	-10%	-74%	-10%	-35%	-47%	-16%	-28%	-6%	-12%	2%	-76%	-2%	6/9/2021	5/20/2022	-47%	176%	72%
Schwazze	SHWZ	12.2%	10.1%	-13%	-41%	-13%	-30%	-19%	18%	-19%	22%	20%	-19%	-43%	-2%	6/1/2021	1/24/2022	19%	-44%	113%
TerrAscends Gage	TER:CN	7.2%	2.7%	-15%	-63%	-15%	-30%	-34%	-8%	-17%	1%	7%	-15%	-64%	13%	7/2/2021	5/27/2022	-39%	347%	-51%
Trulieve Cannabis Corp	TRUL:CN	3.4%	1.8%	1%	-59%	1%	-29%	-44%	-20%	-30%	-3%	9%	-24%	-61%	7%	6/25/2021	5/5/2022	-18%	162%	40%
Verano+Goodness PF	VRNO:CN	3.5%	4.1%	-6%	-61%	-6%	-23%	-39%	-22%	-18%	-7%	0%	-16%	-61%	5%	5/31/2021	5/18/2022			
Simple Average - US-Focused Operators																				
Cap Weighted Average - US Focused Operators																				
Columbia Care Inc	CCHW:CN	1.6%	-0.7%	-8%	-61%	-8%	-27%	-39%	-17%	-21%	-4%	4%	-16%	-62%	5%	7/14/2021	5/6/2022	-53%	135%	
Cresco Labs Inc	CLCN	-4.1%	-7.8%	-11%	-67%	-11%	-38%	-36%	5%	-30%	-6%	14%	-2%	-66%	-15%	7/14/2021	5/6/2022	-53%	135%	
Verano Holdings	VRNO:CN	3.0%	-3.2%	-14%	-66%	-14%	-35%	-43%	-10%	-25%	-15%	12%	-7%	-66%	3%	5/31/2021	5/27/2022	-33%	41%	-3%
Goodness Growth Holdings, Inc.	GDNS:CN	4.7%	6.4%	-6%	-31%	-6%	-22%	-6%	19%	-17%	-7%	34%	-4%	-40%	18%	2/16/2022	11/5/2021	16%	35%	1050%
Canada-Focused Operators																				
Aurora Cannabis Inc	ACB	-1.2%	-35.4%	-45%	-83%	-45%	-59%	-70%	-26%	-24%	5%	-9%	-23%	-84%	-1%	6/9/2021	5/27/2022	-35%	-68%	-56%
Canopy Growth Corp	CGC	1.8%	4.4%	-13%	-81%	-13%	-34%	-44%	-13%	-25%	6%	-11%	-8%	-80%	2%	6/3/2021	5/27/2022	-65%	17%	-22%
Cronos Group Inc.	CRON	-1.3%	-0.7%	0%	-67%	0%	-23%	-25%	-1%	-22%	9%	-3%	-6%	-67%	6%	6/9/2021	5/9/2022	-44%	-10%	-26%
HEXO Corp.	HEXO	2.0%	-1.8%	-39%	-96%	-39%	-59%	-64%	-11%	-33%	16%	-4%	-20%	-96%	2%	6/3/2021	5/27/2022	-81%	-42%	-54%
Organigram Holdings Inc	OGI	-0.9%	0.9%	-18%	-64%	-18%	-31%	-35%	-5%	-15%	11%	0%	-15%	-65%	0%	6/9/2021	5/12/2022	32%	-46%	-31%
Tilray, Inc.	TLRY	-1.3%	5.4%	-10%	-73%	-10%	-42%	-38%	11%	-36%	27%	2%	-15%	-79%	1%	6/9/2021	5/12/2022	-15%	-52%	-76%
Village Farms International Inc	VFF	0.6%	6.5%	-28%	-68%	-28%	-41%	-51%	-18%	-18%	-1%	3%	-19%	-72%	-7%	6/24/2021	5/10/2022	-37%	63%	92%
Simple Average - Canada-Focused Operators																				
Cap Weighted Average - Canada-Focused Operators																				
Ancillary Products & Services																				
Agrify Corp	AGFY	-1.9%	11.9%	-12%	-73%	-12%	-45%	-73%	-50%	-38%	-19%	-7%	-33%	-92%	12%	8/23/2021	5/24/2022			
Emerald Holdings (MJBiz)	EEX	-2.0%	1.8%	25%	-41%	25%	-1%	-13%	-14%	-21%	-5%	10%	-18%	-40%	32%	6/15/2021	5/2/2022	-27%	-48%	-12%
GrowGeneration Corp.	GRWG	-5.3%	12.7%	-13%	-88%	-13%	-44%	-61%	-29%	-36%	10%	0%	-35%	-89%	13%	7/7/2021	5/12/2022	-68%	881%	82%
Hydrofarm Consensus	HYFM	-3.9%	12.6%	-28%	-89%	-28%	-55%	-76%	-46%	-37%	-25%	3%	-31%	-88%	13%	6/1/2021	5/24/2022	-46%		
Innovative Industrial Properties	IIPR	0.0%	7.2%	-8%	-24%	-8%	-35%	-49%	-21%	-30%	10%	-5%	-25%	-52%	5%	11/16/2021	5/12/2022	47%	151%	73%
Leafly	LFly	11.2%	15.4%	-6%	7%	-6%	28%	6%	37%	12%	4%	-29%	16%	86%		3/24/2022	3/7/2022	-2%	5%	
Safe Harbor Fin. / NLIT (Guidance)	NLIT	-0.1%	0.2%	0%	0%	1%	1%	0%	1%	0%	0%	0%	0%	1%	3%	2/16/2022	9/14/2021			
Scotts Miracle-Gro Inc.	SMG	-1.9%	7.0%	-8%	-56%	-8%	-23%	-40%	-23%	-15%	-12%	-7%	-6%	-54%	4%	6/1/2021	5/19/2022	-18%	97%	77%
Valens Company Inc.	VUN:CN	-2.9%	5.3%	-20%	-90%	-20%	-53%	-68%	-32%	-41%	-19%	7%	-21%	-90%	18%	6/10/2021	5/12/2022	-37%	-52%	127%
WM Tech. Consensus	MAPS	-3.1%	4.4%	-3%	-65%	-3%	-28%	-8%	31%	-26%	34%	15%	-15%	-73%	26%	6/1/2021	1/28/2022	-53%	29%	
Average - Ancillary Products & Services																				
Broad Market Indices																				
S&P 500	SPY	-0.6%	4.8%	0.2%	-0.4%	0.2%	-8.6%	-13.0%	-4.6%	-8.8%	3.8%	-3.0%	-5.3%	-13.3%	6.0%	1/4/2022	5/20/2022	18.4%	18.4%	31.2%
Russell 2000	IWM	-1.2%	5.5%	0.2%	-17.0%	0.2%	-9.7%	-16.7%	-7.5%	-9.9%	1.2%	1.0%	-9.5%	-23.2%	7.4%	11/8/2021	5/12/2022	20.0%	20.0%	25.4%
NASDAQ 100	QQQ	-0.3%	7.3%	-1.6%	-7.2%	-1.6%	-15.0%	-22.9%	-8.8%	-13.6%	4.7%	-4.5%	-8.7%	-22.6%	6.8%	11/22/2021	5/20/2022	48.6%	48.6%	39.0%

color coding is relative for % off 52 Week High and Low, absolute for all other returns (green=positive red = negative white=unchanged, deepest color is max and min for period)

What does this all mean for cannabis? On the next page

Making Sense of Cannabis Multiples

What does this all mean for cannabis? The key questions are:

Are reductions to EBITDA estimates finished? While the valuations are low, continued cuts to estimates that were too-aggressive last year make multiple expansion difficult. Margin expectations are still robust at 27% for the public overall, but there is a range here from 23% to 38%. But with low multiples on reduced estimates, meeting or beating those estimates in 2Q results reported in August would generally lead to rapid multiple expansion.

How long can those mid to high 30s margins last? While shorter term investors focus on margin expansion and contraction as this can drive multiples higher, longer term equity investors ultimately focus on the free cash generated, and that is driven by the profit dollars, not percentages - as the old saying goes "you can't eat margin". A 25% margin on \$1 billion of revenue (\$250 million of profit) is larger and ultimately preferable to a 35% margin on \$500 million (\$175 million).

Shift to Cyclical from Growth investors: Though multiples are low, the industry generally needs a shift in the investor base from those who view these like tech names for "fast growth at any cost" and higher multiples, to investors more used to cyclical names like consumer and industrials. These investors typically focus on the drivers of growth (organic vs acquisitions, price vs volume), incremental margins and incremental dollars, and can look through lower prices to also see higher volumes, and lower total margins amidst higher profit dollars.

Is Legal Cannabis a consumer defensive if the economy enters a recession, or is it consumer discretionary? So far there has been little experience with legal cannabis in markets amidst a recession. Alcohol profits have historically done fine in recessions, but there can be trade down to cheaper versions of products. Cannabis has the unique competitor of the unlicensed market, which is typically cheaper. Investors must remember that while cannabis may be recession resistant, purchases of legal cannabis can shift back to the unlicensed market.

MJResearchCo conducts rigorous investment analysis of the legal cannabis industry to help professional allocators of capital make better investment decisions.

To learn more visit <https://mjresearchco.com/>

The Dosing Project

Solving the Disconnect - Part I

What Disconnect?

Cannabis products are sold from coast to coast. However, it is increasingly clear that the consumer community is not happy.

Cannabis has already become a multi-billion-dollar industry. Cannabis products are sold from coast to coast. However, it is increasingly clear that the consumer community is not happy, and many are leaving the regulated market because they experience inferior products. These products are perceived as too expensive and burdened by excessive tax rates. Efforts to apply national standards are still in discussion, while the Cannabis industry is mired in a patchwork of state-by-state safety regulations and a lack of interstate commerce. The Cannabis consuming public deserves a solution.

As co-founder of the CESC, a nonprofit Cannabis Science organization, Dr. Jean Talleyrand, M.D. recently visited the Flore Dispensary in San Francisco's Castro District. Flore Dispensary is a newly opened medical Cannabis retail store located at a historic corner. At this corner more than 25 years ago, Brownie Mary handed out Cannabis infused "treats" to AIDS patients. Just down the street, Dennis Peron's Cannabis Buyers Club became the world's first medical Cannabis dispensary since prohibition. A few years later, Dr. Talleyrand evaluated his first medical Cannabis patients, also down the street. Dr. Talleyrand now represents a pressing need for the scientific exploration of Cannabis products. The CESC is coordinating a launch of Version 2 of The Dosing Project with the Flore Dispensary. The Dosing Project investigates community-accessible Cannabis products to discover optimal doses and efficacy. What better venue than this: a historic community that provides a natural resource for research? The Flore Dispensary along with other CESC strategic partners are the proving grounds for this CESC initiative.

"The Cannabis community is thirsty for knowledge. They are curious to know what and how much works for their aches, pains, and stressors. They want to know what gives energy or relaxes them. What makes them hungry, sleepy, or (yes, even) aroused"

Dr. Jean Talleyrand, Chief Medical Officer of the CESC

How have we landed in the present situation: a largely unmet need for Cannabis product surveillance for both safety and efficacy for consumers?

At a recent (June 14, 2022) meeting of the FDA, after soliciting public comment it was clear that consumers expect regulators not to prohibit, but to monitor Cannabis product efficacy, safety, and content.

The Dosing Project

Solving the Disconnect - Part I

There are elements of regulatory disconnect at all levels of the Cannabis industry. Federal and state regulatory agencies are addressing limited parts of the challenges presented by Cannabis. Because the FDA has approved THC and CBD as pharmaceutical ingredients, it sets up a regulatory conflict with Cannabis products. The pathway for seeking regulatory approval and oversight for food and dietary supplements incorporating cannabinoids is opaque. This results from a basic tenant of the FDA that pharmaceutical ingredients cannot be food additives or supplements. Regulatory oversight at the state level has largely focused on product safety, eschewing the question of product efficacy, and leaving that to the commercial industry and marketplace to sort out for itself. Commercial organizations, however, are barely able to focus on evaluating their product efficacy. After being overwhelmed by high state and local taxation rates, and the vagaries of getting and keeping a bank account in the current banking environment, Cannabis product manufacturers are left with few resources to devote to research and development. As a result, the consumer is left in the dark and unsure how to make good purchasing decisions.

The CESC's Solution: Establish a Cannabis product ecosystem. The CESC is building a product formulary comprising a validated set of Cannabis products that consumers can rely on. Furthermore, the CESC is developing an application that predicts dose and outcomes from products across all categories. This model is anchored to community assessments derived from the Dosing Project and powered using AI, machine learning algorithms engineered by top-tier Cannabis data science professionals.

Over the next five issues of The Cannabinoid Playbook, we will illustrate the conceptual foundation and provide the details how the CESC solves this disconnect between Cannabis industry growth potential and current consumer dissatisfaction.

- I. A Paradigm Shift: Introducing the Dosing Project as a broad observational study platform providing a non-traditional approach to clinical study
- II. Solving the "Sativa" or "Indica" dilemma: Cannabis aroma provides a foundation for classification
- III. Beyond Cannabinoids: How Cannabis terpene, thiol, and ester components can expand product classification
- IV. Validating characteristic anticipated effects of Cannabis use and categorizing responders
- V. Evaluating Cannabis products

For further information, please contact The CESC at info@thecesc.org at the end in the available white space at the bottom of the 2nd page. Also, can we add a link to our website in this same space. Visit [The CESC](https://www.thecesc.org)



John S. Abrams, PhD
Chairman & CSO
j.abrams@thecesc.org

Dr. Abrams specializes in Cannabis Data Science and Chemotyping, as well as Cannabis Clinical Correlates. He has invented a patent pending, icon-based system that communicates natural product content complexity to consumers. He spearheaded The Dosing Project, a web-based observational clinical study platform. John has also devised a cultivation sampling plan. Dr. Abrams previously served as the Scientific Director of The Emerald Conference. He is the Chairman & CSO of the Clinical Endocannabinoid System Consortium (CESC) a Non-Profit ensuring best practices for Botanical Medicine. He has over 40 years of experience in Biotechnology, with a deep background in Biochemistry, Immunology and Antibody Technology, as well as an abiding interest in Linguistics. He has authored over 100 scientific publications and holds over a dozen issued patents.



Jean L. Talleyrand, M.D.
Chief Medical Officer
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Dr. Talleyrand is a pioneer Cannabis Specialist clinician. His experience spans nearly twenty-five years providing clinical guidance to patients using Cannabis. Dr. Talleyrand and Dr. Abrams form the well-balanced pre-clinical and clinical executive team of the CESC. His contributions to the Dosing Project involve product categorization and respondent stratification. Dr. Talleyrand trained at the renowned University of California, San Francisco Medical Center, receiving board certification in Family and Community Medicine. He currently consults patients on Complementary and Alternative treatments with a focus on Cannabis as herbalism.

HOT IN THE NEWS

July 2022

- 1** 23 State Attorneys General Call On Congress To Address Marijuana Copycat Products That Resemble Common Food Brands
- 2** ⚾ MLB Allow Teams to Sell CBD Sponsorships
- 3** Thailand rushes to rein in cannabis use a week after decriminalisation
- 4** MILLENNIALS as CANNABIS CONSUMERS
- 5** FDA takes another look at CBD, but insiders are skeptical much will change
- 6** Arkansas Supreme Court blasts failings of state medical marijuana regulators
- 7** Johnson & Johnson asks FDA to 'chip away' at cannabinoid regulations
- 8** New Jersey Adult-Use Sales Predicted to Remain Strong After Successful Launch



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