

EIGHTH REVOLUTION

# MONTHLY PLAYBOOK

CANNABIS & HEMP

PLATINUM



SEPTEMBER 2021

# TABLE OF CONTENTS

SEPTEMBER 2021

---

Letter from the team .....1

CHAPTER 1

Regulations .....3

US States & Regulations.....3

International Regulations.....4

Who’s Legal & Who’s Not.....5

CHAPTER 2

Economic Climate .....6

Hemp Wholesale Pricing .....6

Keeping a Pulse on Delta-8 .....9

Sector Market Analysis .....10

CHAPTER 3

INDUSTRY .....11

The Supply Chain’s Breaking Point .....11

Brand Focus: Papa and Barkley .....12

CHAPTER 4

INFORMATION .....13

Hot in the News .....13

The ABCs of Cannabinoid Manufacturing .....14





# NOTICE

The information contained in this document is intended for the sole confidential use of the designated recipients and contains confidential information. This information can not be shared. If you have received this information in error, any review, dissemination, distribution or copying of this information is strictly prohibited. If you have received this information in error, please notify us immediately by telephone or email. Thank you.

For questions or  
more information,  
please contact

[info@8threv.com](mailto:info@8threv.com)

(516) 653-2006

[www.eighthrevolution.com](http://www.eighthrevolution.com)

# DEAR READER,

**W**e want to thank you for your trust, and most importantly, your time. With the endless amount 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. We at Eighth Revolution initially created this document to help our partners understand how their short-term decisions were having long-term effects on the success of their businesses. 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 more helpful than others and want us to expand on it, please never hesitate to reach out. For any suggestions or questions, we can be reached directly at [bryan@8threv.com](mailto:bryan@8threv.com).

***Welcome to the Revolution.***

**Bryan Fields**

CEO, CO-FOUNDER



**Kellan Finney**

CSO, CO-FOUNDER

# SEPTEMBER 2021

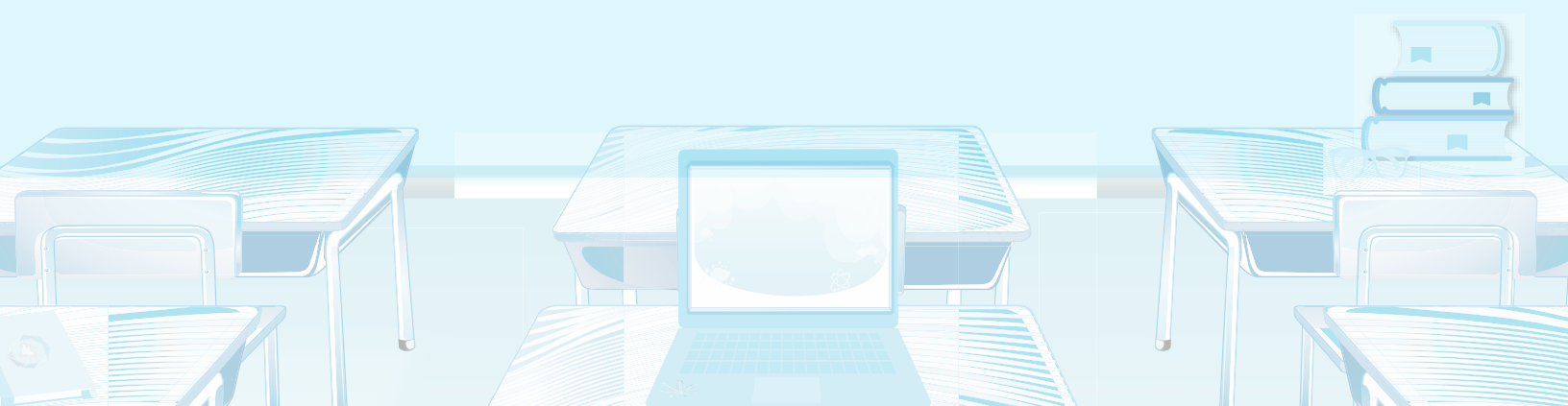
## A Note from Your Partners

The cannabinoid industry as a whole continues to rapidly evolve and grow with the total addressable market potentially reaching \$100 billion by the end of this decade. With such rapid growth there is bound to be growing pains and learning opportunities. This is evident as the CBD hemp industry continues to experience dramatic ups and downs. Today, Delta 8 is restricted in 21 U.S. states. Six months ago Delta-8 was providing significant liquidity to operators capable of manufacturing the chemical. The scientific evidence continues to build regarding the benefits cannabinoids provide to the human body, and because of this evidence, the future outlook for hemp and cannabis could not be brighter. We look forward to continuing the journey with everyone involved.

- Kellan Finney

As operators look to expand their footprint, an increase in mergers and acquisitions (M&A) is a path toward larger strategic positions. Tim Seymour of CNBC recently said “You’re going to see those companies that have been waiting on the sidelines begin to start nibbling some more as valuations become attractive enough for certain capital-rich players.” Recently, conversations have intensified with outside organizations looking to dive headfirst into the exploding industry. These opportunities can lead us down two different paths. This could lead to either the acceleration of consolidation and strong growth, or it could lead to a more difficult path toward one entity, which has never been straightforward and is even more challenging when it comes to cannabis. The path you choose depends on your plan of action and the resources leading the charge.

- Bryan Fields



//

The second half of 2021 capacity ramp,

coupled with the 2022 into 2023

tri-state adoption, will

**help fuel the  
industry's  
forward growth**

and that's before Maryland,


Pennsylvania, Florida, Ohio and others

are factored into the equation. //<sup>1</sup>


# LETTER FROM THE TEAM

As the summer winds down, what was expected to be the summer of Canna love with multiple mergers and acquisitions (M&A) didn't happen like we thought it would. Why depends on who and what ultimately happened. What we can take from this is the conversations were happening but the details that go into these events are massive. These processes take time, and aligning two active organizations will always be a challenge, even more so in the cannabis industry. As organizations scour the marketplace looking for attractive partners to integrate into their budding, or in some cases exploding organizations, multiple factors need to be considered. Let's say you've done the first part and have found your partner, you worked out the terms and you're ready for happily ever after. The question is what happens after you say, "I DO"? In our experience in the Cannabis M&A space, the

initial step post-merger has varied across the map. Some organizations approach the relationships as independents and operate completely separate of one another. These organizations typically are adding on value services or operate in the same landscape. These types of M&A don't typically have synergistic benefits unless combined purchasing departments take advantage of economies of scale. Please note, this is not one size fits all and every scenario is different. Two growing organizations scale better than one organization scaling on its own. The adage of more is better applies in this scenario. The other side of the coin is, we've seen companies acquiring others deploy a small team to the newly acquired organization. This team role is solely to align the new organization for the benefit of the synergistic efforts. To truly benefit from the combination of aligning the operations of two



## The Question is, What Happens After You Say, "I Do" ?






## The Challenge Continues to Be, the *Speed* with which the **Industry is Moving**



organizations, a detailed plan explaining the intricacies of both businesses needs to be developed and then executed. Information transfer, reporting, SOPs, technology stack, leadership role, purchasing decisions, 3rd party resources, consultants, lawyers, an accountant--these different areas are just a few of the many, nuanced details that arise in these acquisitions and need to align within the new organization. The challenge continues to be the speed with which the industry is moving. The C-Suite has identified a key partner and has acquired that company. If the execution team doesn't exist, or isn't aware of some of the key details on why and where the C-Suite found these added synergistic add-ons, then do the shareholders actually realize the value of the combined efforts?

We recommend the option of deploying a small team. In some instances, these small teams might not be available. This is where a trusted third-party resource can make or break the M&A. Have the team audit the new operation and provide a clear roadmap for how this acquisition integrates. The goal of the team is to ensure the shareholders receive the value as originally intended. Understanding the business case and having a trusted party can be a huge difference to the alternative which is uprooting a strong employee to a new role where they may become disgruntled, frustrated or just not familiar with the necessary steps to aligning organizations. The expectation going forward is that many will try various paths forward but the end result will be across the map. Multiple alignments will be needed, and specialized resources, to help accomplish this role will continue to grow in importance.







# DOMESTIC NEWS



## Oklahoma Activists Prepare 2022 Ballot Measures to Legalize Marijuana and Overhaul State's Medical Cannabis System

" There's a robust statewide, grassroots effort to develop both a constitutional medical petition and a constitutional full-access petition. They're designed, if they both pass, to function in parallel to one another." <sup>6</sup>

## Arkansas Awards Final Two Medical Marijuana Dispensary Licenses

" Since the state's first dispensary opened in May 2019, patients in Arkansas have purchased more than 54,009 pounds of medical marijuana, according to the commission. " <sup>7</sup>

## Cuomo's Political Crisis Could Further Delay New York Marijuana Rollout, Hurt Smaller Entrepreneurs

"We're at a critical moment here where we are waiting for the governor to appoint a chair for the cannabis board. Any kind of political disruption certainly can delay (the program), especially at this point in the process " <sup>8</sup>



# INTERNATIONAL REGULATIONS

## ARGENTINA



"It is that of an Argentina that today operates at two speeds, that has sectors that are recovering, or that have even already recovered and surpassed the levels prior to the pandemic. Especially the industrial sector that today is already producing 4 average points above 2019, as well as construction, which is also doing very well, the knowledge economy or the energy sector. That is part of an Argentina that is growing and recovering."

## GERMANY



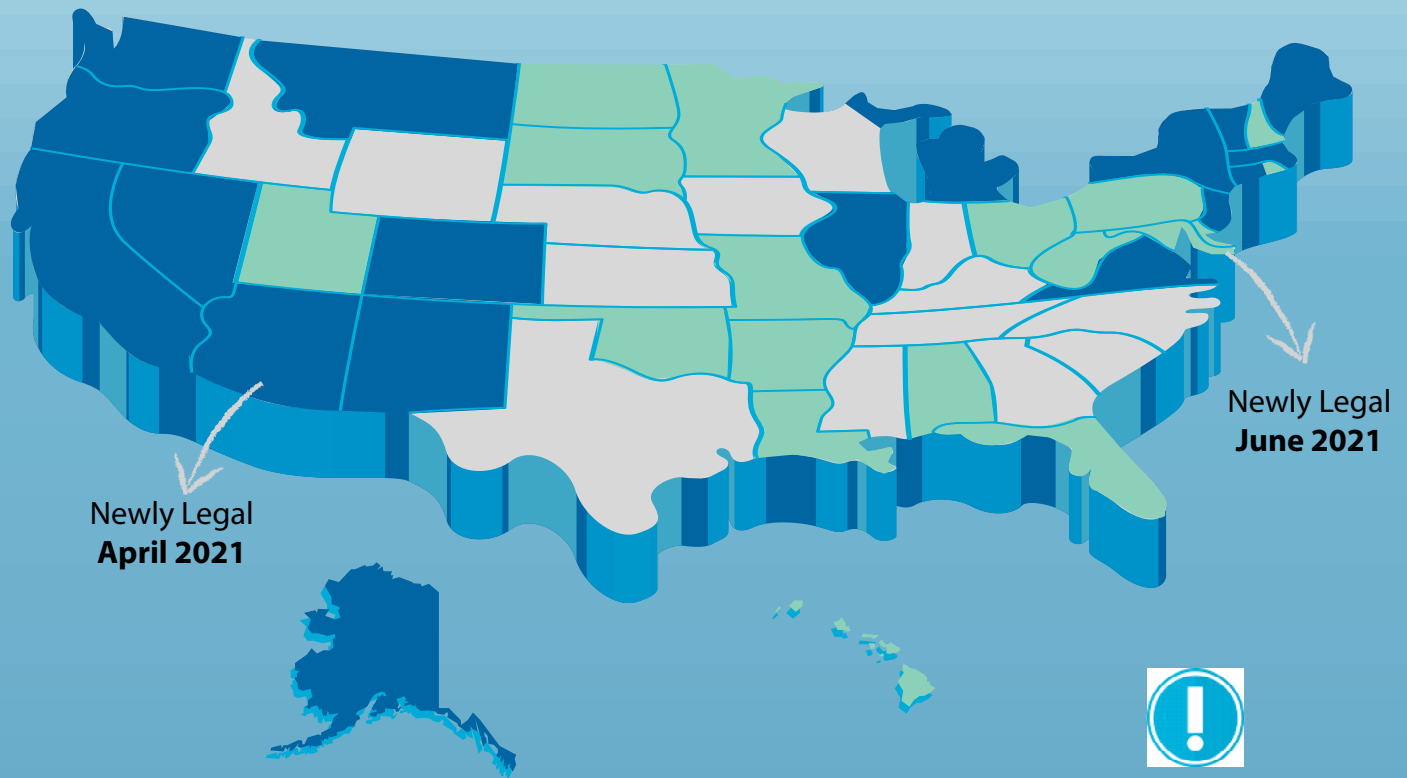
"The success of the German medical cannabis market has brought Cannocum AG to become the first publicly traded medical cannabis company in Germany. The fully licensed pharmaceutical wholesaler, importer and manufacturer was listed on the Dusseldorf Stock Exchange in May 2021. Such achievement represents a significant milestone for the medical cannabis market in Germany. Today, Germany represents the largest and the most profitable medical cannabis market in Europe."

## ISRAEL



"Blockages on the exportation of medical Cannabis were removed by the Israeli government on Sunday, according to N12. Economy Minister Orna Barbivay, Finance Minister Avigdor Liberman, Health Minister Nitzan Horowitz and Public Security Minister Omer Bar Lev agreed to increase exports and match the potential sum to be gained from these exports, estimated at around NIS 3 billion annually."

# LEGALITY OF CANNABIS IN THE UNITED STATES



**Did you notice?**  
We've added some new brothers and sisters to our growing family!



ADULT USE



MEDICALLY LEGAL



# WHOLESALE DATA

## WHOLESALE HEMP GENETICS PRICING

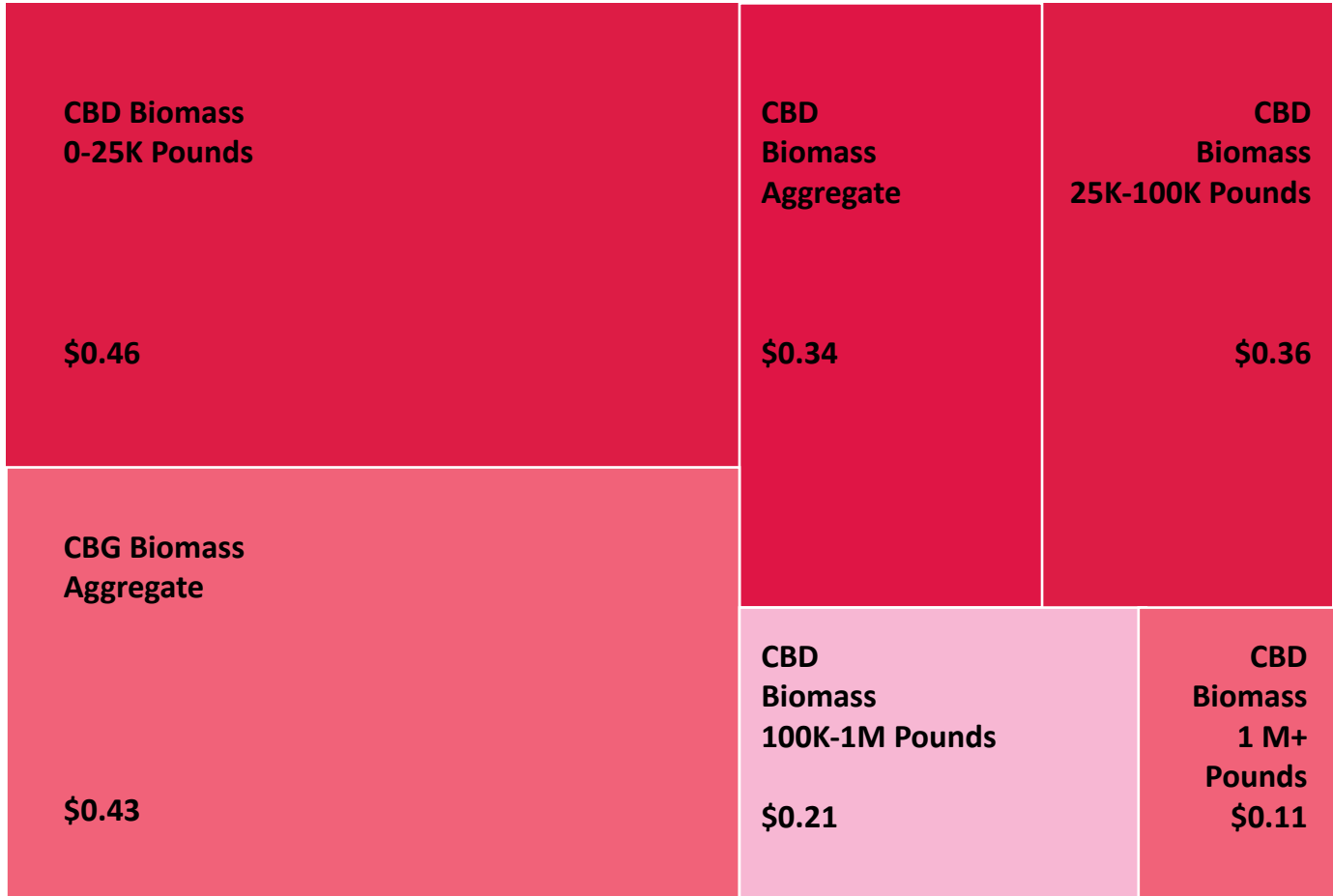


**Note:**  
 The color represents the percent change in price from the previous month.  
 The dollar amount refers to the price of the product in \$ / unit.

The genetics wholesale market showed varying trends for different product categories. The clone market for both CBD and CBG crops was stable with CBD clones showing a 3% increase from last month and CBG clones' prices only dropped \$0.06 / unit. This is a stark difference when you observe the prices for CBD and CBG seeds which both dropped 8%. Overall, the need for seeds is decreasing as companies either utilize clones to provide predictable crops from cannabinoid content or are building internal genetics operations.<sup>9</sup>



## WHOLESALE HEMP BIOMASS PRICING

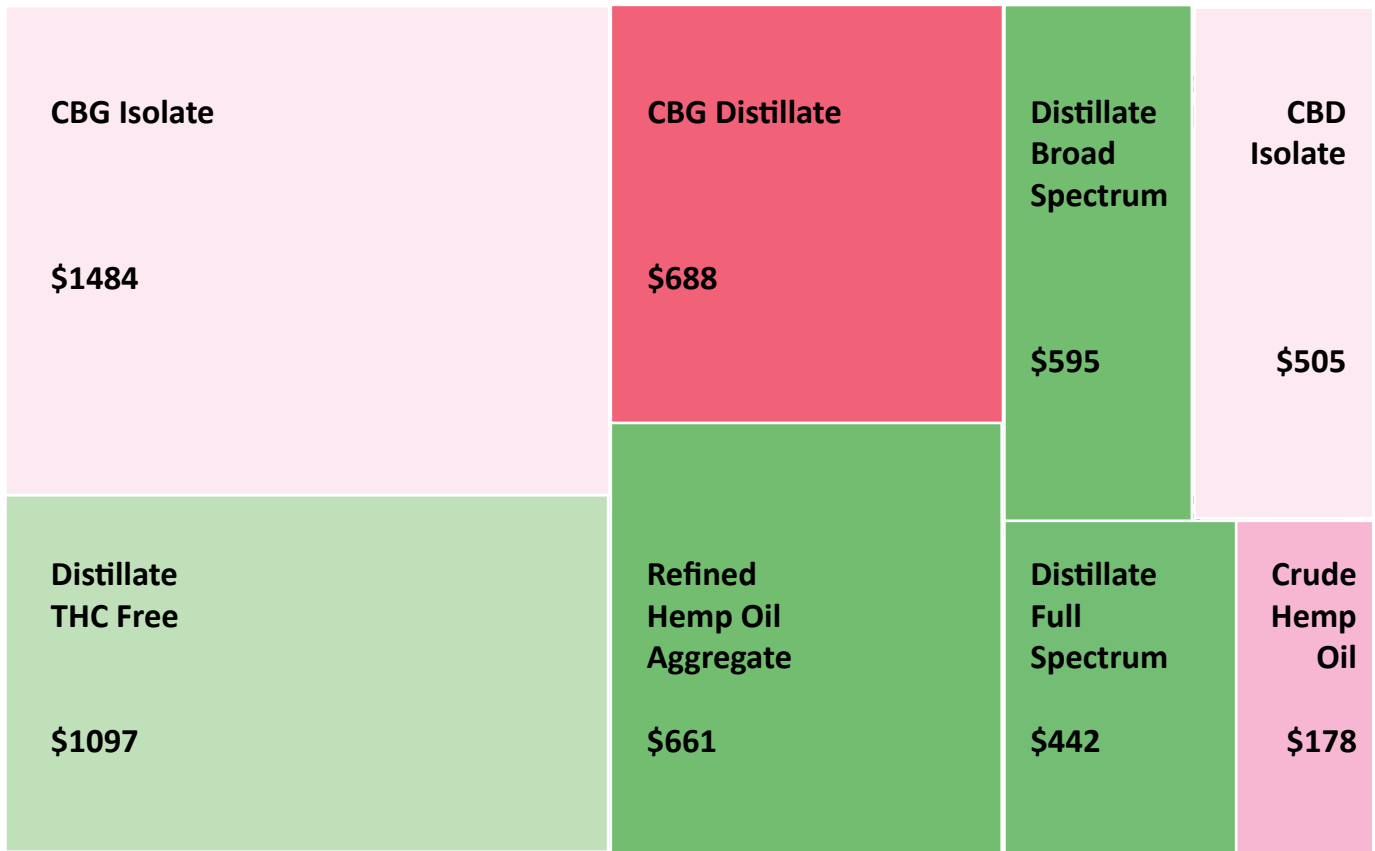


**Note:**  
 The color represents the percent change in price from the previous month.  
 The dollar amount refers to the price of product in \$ / % CBD or CBG / lbs.

The wholesale biomass market was down across the board. With lot sizes between 0-50,000 lbs. decreasing over 10% from last month. Our firm strongly believes this is attributed to the upcoming harvest season. Farmers are now discounting inventory to make storage room for this year’s crop. With the aggregate price hovering around \$0.34 / % CBD / lbs. it has become a buyer's market. Based on conversations with our network, there are still significant amounts of low-quality biomass flooding the market. That being said, we are advising that our clients keep a close eye when intaking large orders, to point of obtaining multiple CoA’s per super sac. On a positive note CBD flower showed a 2% increase from last month and continues to provide the greatest return on investment for farmers with demand stabilizing in Europe. <sup>9</sup>



## WHOLESALE HEMP DERIVATIVE PRICING



**Note:**

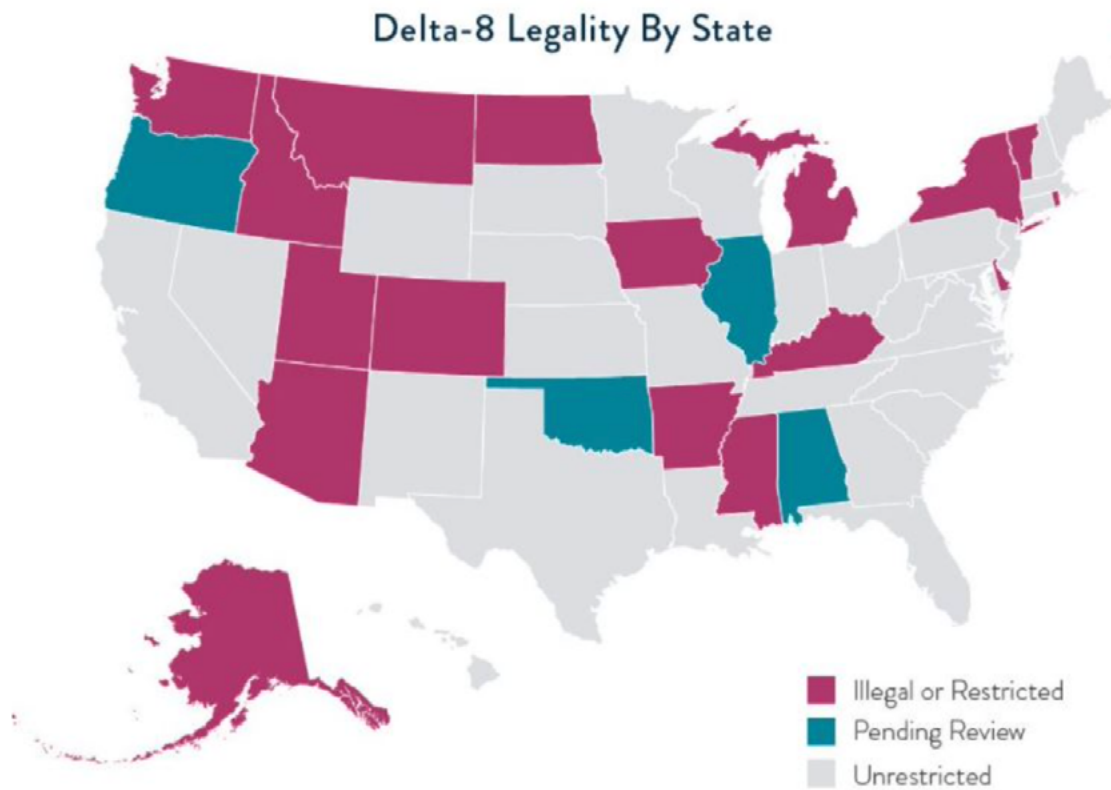
The color represents the percent change in price from the previous month.  
The dollar amount refers to the price of the product in \$ / unit.

The whole sale derivatives market has shown significant volatility from month to month. In addition, based on conversations with our vendors, there is large price variations from state to state. This is apparent when comparing the low end for crude CBD oil which is currently around \$70 / kilogram vs the high end which is \$178 / kilogram. Based on this observation, there must still be a large variation in product quality contributing to the price difference. Delta-8-THC is still prevalent in states that lack medical and recreational programs. Due to this prevalence, less volatility has been observed with CBD isolate and distillates, all of which are used as precursors in the synthesis of Delta-8.<sup>9</sup>



# KEEPING A PULSE ON DELTA-8

Nearly half of the states have implemented or are in the process of implementing regulations regarding Delta-8. However, some of the states with the largest markets (California, Texas, and Florida) have yet to provide any insight as to how the state will handle the new molecule. Due to this fact, there are more branded products that have started to hit shelves across the country. From our perspective, this suggests that there is enough runway before the products are completely outlawed or legalized to justify investing into development and launch of Delta-8 brands. Even though this is the case Delta-8 distillate did fall 5% from last month to \$1000 / kilogram, the second consecutive decrease, this summer. This could be a result of more operators providing the product, or a lack of demand, either of which would negatively influence the price. We recommend staying closely attuned with each state's regulations relating to Delta-8, as they may vary depending on where your operations are based.<sup>12</sup>



Note:  
 Figure 1. 2021 Delta-8 legality by State sourced from New Frontiers.



# Sector Analysis\*

INDICES	3 MONTH	6 MONTH
S&P 500	12.43%	18.29%
DOW JONES	2.65%	16.82%
NASDAQ	10.41%	12.31%
GLOBAL CANNABIS INDEX	1.36%	-31.02%
AMERICAN CANNABIS STOCK INDEX	-18.82%	-43.74%



“ Reaffirmation of fundamentals and negative price action translates into opportunity as we are an active strategy that seeks to position the fund for the long term growth of the industry, and can be tactical in this environment”<sup>11</sup>

\*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	17.9%	19.21%
TECHNOLOGY	14.84%	10.03%
INDUSTRIALS	3.66%	15.91%
FINANCIALS	3.21%	18.78%
CONSUMER CYCLICAL	6.83%	7.24%
CONSUMER NON-CYCLICAL	1.75%	1.01%
BASIC MATERIALS	2.06%	-1.67%
ENERGY	-3.2%	10.67%
UTILITIES	3.66%	8.12%
ALTERNATIVE HARVEST ETF (MJ)	-16.6%	-31.28%
MULTI-STATE OPERATORS (MSOS)	-13.2%	-31.01%

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





RAW MATERIALS



TESTING



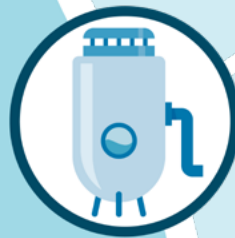
SEPTEMBER 2021

What's this month's  
broken link in the supply chain?

### Manufacturing, Retail, & Distribution

From childproof plastic containers to vape hardware, the majority of packaging for cannabis products is manufactured in Asia. One of the main transportation routes out of Asia to the US markets has been the Shanghai Pudong International Airport. However, due to reported COVID-19 cases which were reported among cargo workers, the airport has closed the airport cargo terminal. This closure is already affected several major cargo shippers including Lufthansa Cargo, Qatar Airways, Air Bridge Cargo, and Polar Air Cargo, which were all forced to divert shipments to other airports. As the global pandemic continues to flare up and affect the supply chain in various ways it is important for operators dependent on consumables to display extra diligence when managing inventory levels of consumables and packaging. Maintaining several months of inventory is vital to keeping your brands on shelves and consumers coming back for the same product. Consistency will be key to managing the ever evolving supply chain.

MANUFACTURING



THE  
BREAKING  
POINT

DISTRIBUTION



RETAIL



# Brand Spotlight



Price Range	\$12-117
Target	Women and Men
Availability	California
Ownership Status	Private

*Why We Love Them:  
The Wooden Elements Blend Nicely  
into the Rustic Feel and Design*

**Our Rating: 8.9 / 10**



## Color Contrast Accentuates Critical Elements

Use contrasting colors to accentuate critical elements on your packaging. As consumers quickly scan the available products, you want to use color contrast to catch their eye. Papa and Barkley does a phenomenal job of this with their wide-ranging color pallet.

Papa barkley's beautifully designed branding is minimal but powerful and professional. It's a masterclass in colors. Brands sometimes feel the need to push multiple artistic elements when creating their packaging. Papa Barkley demonstrates this is not needed. The wooden appearance works beautifully with the blue and white. The same stylistic approach is used on their website. The shades of tan don't interfere with the product branding. The social proof is also apparent under the main header that is clear, clean. The photo elements of the product are also strategically placed to take your eye from the right toward the left where the Call to Action CTA is located. The colors are used to systemically take you from the main header to next key point as your eyes work through the page. The biggest negative on their website is their USP. Why Papa Barkely vs others? What makes you unique? This element helps me understand the why. The element is positioned farther down the page but its white and green contrast doesn't work as well as the others.<sup>10</sup>

Visit Papa And Barkley at [papaandbarkley.com](http://papaandbarkley.com)





# HOT IN THE NEWS

**Beyonce  
Announced  
Her Next Move:  
Build a  
Cannabis Farm**

**Cannabis  
Company  
Ayr Said to  
Buy THC-Drink  
Maker  
Cultivauna**

**Michigan  
Cannabis  
Sales  
Increase 56%  
in July to  
Record \$171  
Million**

**Dothan, AL  
area Oncologist  
was elected as the  
chairman of the  
Alabama Medical  
Cannabis  
Commission**

**Marshawn Lynch's  
Dodi Blunts  
Teams Up with Last  
Prisoner Project to  
Launch  
Apprenticeship  
Program for  
Justice-Impacted  
Individuals**

**Village Farms  
Enters U.S. CBD  
Market with  
\$75 Million  
Acquisition**

**"The governor of  
Colorado presented  
the creators of  
South Park with  
souvenir license  
plates that pay  
homage to the  
fictional marijuana  
company  
Tegridy Farms..."**

# The



# of cannabinoid manufacturing

In the world of manufacturing, things move quickly. The manufacturer's goal is to manufacture their product with the target quality in the proper quantity with as little waste possible. Many manufacturing outlets will do their quality control before a process starts and after the process ends, but *what about while something is being created?*

Provided to you

**Hellma**<sup>®</sup>

Welcome to The ABCs of cannabinoid manufacturing

# Cannabis Manufacturing for the 21<sup>st</sup> Century

## Part 8: Monitoring Supercritical CO<sub>2</sub> Extraction

by Stacey L. Carrier, Ph.D.

Supercritical CO<sub>2</sub> extraction is just one of the extraction methods used to remove all the species of interest from the raw plant material. It has several advantages as it is nonflammable, non-toxic, relatively inert, abundant and inexpensive. [1, 2] Another main advantage is that at a temperature of 31°C, you can maintain the supercritical liquid at 74 bar. [3, 4] The various components of cannabis have different solubilities at different temperatures and pressures, in theory, allowing a clean extraction of the target compounds. However, one study has shown that the concentrations of different products can be extracted at different rates, so the extract should be analyzed. [5, 1, 6] In this paper, we explore monitoring the supercritical extraction of CBD, THC and other products of interest from dried hemp (low-THC cannabis sativa) material.



### The Setup

We worked on a Thar superfast 2x25 system, which is capable of processing up to 120 kg raw material a day. A Hellma Excalibur HD FCP flow cell was integrated directly after the extraction vessel and before the first separator.

The integration of the cell directly in the line allowed us to obtain real-time measurements of the extracted material via a tec5 MultiSpec near-infrared system. Data was collected with a 6 ms integration time and 20 averages per spectra. Spectral data was saved every minute. At 10-minute intervals after the extraction portion of the procedure, a sample was gathered for HPLC analysis. The amount we were able to collect decreased dramatically after the first couple of collections. Each run lasted approximately 2.5 hrs. The FCP cell was checked between each run to ensure that no fouling had occurred.



# Cannabis Manufacturing for the 21<sup>st</sup> Century

## Part 8: Monitoring Supercritical CO<sub>2</sub> Extraction

### The Results

Each run had the same characteristic spectral behavior. After the initial terpene run, the transmission would decrease to a point, remain stable for a short period of time. Then it would increase to above 100% transmission and remained stable through the rest of the run as seen in Figure 1.

FIGURE 1

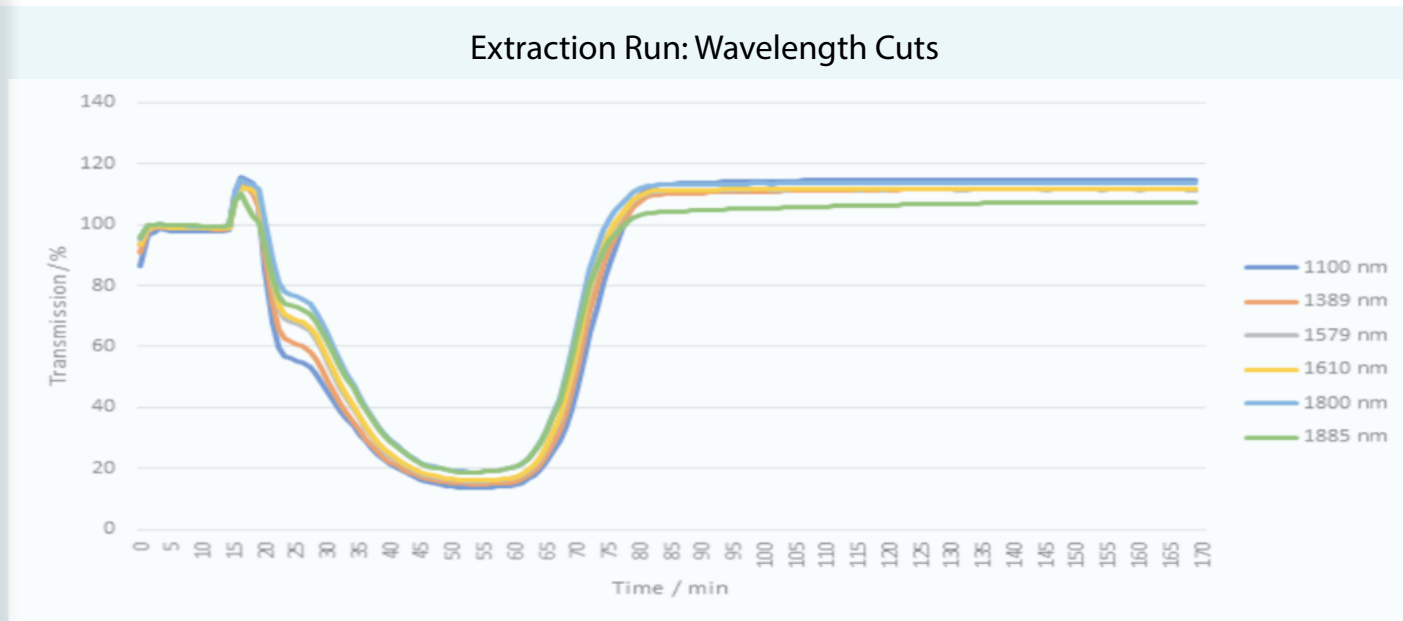


Figure 1: Temporal behavior from several different wavelengths

### Conclusions

In the data shown, the runs reach a final state by approximately 80 min, which is corroborated by the HPLC results. The results show a promising correlation between the HPLC data and the spectroscopic data. A quick statistical analysis also confirms that there are no minute changes that are not readily apparent after the data reaches the last steady state. This steady state is the actual endpoint, where a majority of the products of interest have been extracted. Other runs finished in an average of 86 minutes showing that the run has extracted most of the useful product much sooner than the recipe-based extraction cycle has prescribed and performed. Thus, the spectroscopic data shows the capability to efficiently monitor the process in real time to determine the actual endpoint and ultimately increase efficiency and throughput.

## Missed Part Seven?

[CATCH UP](#)

Expanded versions of previous article installments are available upon request.

*Hellma USA, Inc has been serving the U.S. markets in spectroscopic accessories for over 50 years. They specialize in quartz manufacturing for the lab and probes for the process. Dr. Carrier earned her Ph.D. from University of Wisconsin – Madison in Physical Chemistry specializing in Spectroscopic techniques to monitor chemical reactions.*



# References

1. Harrison, T. (2021, August 16). Dueling metrics. CB1 Capital. <https://www.cb1cap.com/blog/2021/8/16/dueling-metrics/>
2. Goodrich,, Richelle E. "Making Wishes: Quotes, Thoughts, & a Little Poetry for Every Day of the Year." Goodreads. Goodreads. Accessed June 18, 2021. <https://www.goodreads.com/quotes/1046748-small-steps-may-appear-unimpressive-but-don-t-be-deceived-they>.
3. Jaeger, Kyle. "First-Ever Congressional Bill To Decriminalize All Drugs Announced Ahead Of Nixon Drug War Anniversary." Marijuana Moment, June 15, 2021. <https://www.marijuanamoment.net/first-ever-congressional-bill-to-decriminalize-all-drugs-introduced-ahead-of-nixon-drug-war-anniversary/>.
4. Bursztynsky, Jessica. "Uber CEO Says Company Could Get into Cannabis Delivery." CNBC. CNBC, April 12, 2021. <https://www.cnbc.com/2021/04/12/uber-ceo-says-company-could-get-into-cannabis-delivery.html>.
5. Battista, Judy. "NFL, NFLPA Will Provide Funding for Research into Pain Treatment, Including Medical Marijuana ." NFL.com. NFL, June 8, 2021. <https://www.nfl.com/news/nfl-nflpa-will-provide-funding-for-research-into-pain-treatment-including-medica>.
6. Adlin, B. (2021, August 6). Oklahoma Activists Prepare 2022 Ballot Measures to Legalize Marijuana And Overhaul State's Medical Cannabis System. Marijuana Moment. <https://www.marijuanamoment.net/oklahoma-activists-prepare-2022-ballot-measures-to-legalize-marijuana-and-overhaul-states-medical-cannabis-system/>
7. Marijuana Business Daily. (2021, August 10). Arkansas awards final two medical marijuana dispensary licenses. MJBizDaily. <https://mjbizdaily.com/arkansas-awards-final-two-medical-marijuana-dispensary-licenses/>
8. Smith, J. (2021, August 12). Cuomo's political crisis could further delay NY marijuana rollout. MJBizDaily. <https://mjbizdaily.com/new-york-political-crisis-likely-to-delay-adult-use-marijuana-rollout/>
9. U.S Wholesale Hemp Price Benchmarks - July 2021. PDF file. [www.hempbenchmarks.com](http://www.hempbenchmarks.com)
10. CBD & Thc products for wellness. Papa & Barkley. (2021, August 16). <https://papaandbarkley.com/>.
11. Lizzygurdus. (2021, August 14). Four things to watch in the cannabis Market amid earnings season, possible legislation. CNBC. <https://www.cnbc.com/2021/08/14/four-things-to-watch-in-cannabis-amid-earnings-season.html>.
12. New Frontier Data. (2021, August 27). <https://newfrontierdata.com/>.





# 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 judgement. 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](mailto: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.

You obtain access to this document at your own risk, and Eighth Revolution accepts no responsibility for any interference, loss, damage, or disruption to your own computer system which arises in connection with your use of the document or any linked website. You must take your own precautions to ensure that the process which you employ to obtain access to this document does not expose you to the risk of viruses, malicious computer code, or other forms of interference which may damage your own computer system.

info@8threv.com  
(516) 653-2006  
[www.eighthrevolution.com](http://www.eighthrevolution.com)