

EIGHTH REVOLUTION

MONTHLY PLAYBOOK

CANNABIS & HEMP

PLATINUM



JUNE 2021

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MORE INFORMATION,
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DEAR READER,

We 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.

Welcome to the revolution.

Bryan Fields
CEO, CO-FOUNDER



Kellan Finney
CSO, CO-FOUNDER



JUNE 2021

A NOTE FROM YOUR PARTNERS

The marathon in the CBD industry is far from over, as prices and players continue to be volatile. With a large CBD player closing its doors, others operating in the space have a growing opportunity to gain market share. On the other side of the coin, companies manufacturing CBD are twiddling their thumbs, waiting for further guidance from the FDA and USDA, which hopefully will come before the industry is bare bones. Lastly, commodity prices continue to soar. We believe this current environment will allow companies to expand their revenue streams and harness the true versatility of the cannabis plant, whether this involves using the hurd for building materials, the chemical waste streams for commodities, or the phytochemicals for medicine.

— Kellan Finney

After the Harvest & Trulieve deal, many industry insiders have called this upcoming month the “summer of canna love.” Will other large MSOs feel the need to quickly respond? Will urgency, the main theme of our May report, play a vital part in next steps? According to our research, the answers to both are a resounding “Yes.” As the industry continues to blossom, we recommend leaning into these feelings of urgency by conducting your own strategic moves during this time of consolidation. Our favorite approach is the smaller scale roll-up, and though it’s not as heavily celebrated or scrutinized as the Trulieve deal, it’s just as crucial to the development of your operations.

— Bryan Fields





“THERE
WILL BE
ANOTHER WAVE
OF
INDUSTRY
CONSOLIDATION”¹

- RALPH MARTSON
FOUNDER OF TENEO CAPITAL MANAGEMENT

LETTER FROM THE TEAM

In the past, this piece has been used to discuss current events and how they'll influence the future of the cannabinoid space. By cross-referencing conversations with industry leaders with both new and ongoing monthly trends in the market, we identify the important nuggets of wisdom that are crucial to finding success.

This month, the Eighth team thinks it's crucial to take a slightly different approach and focus solely on the announcement of Trulieve's acquisition of Harvest Health. This Florida kingpin has made waves by taking over the largest operator in Arizona in an all stock deal, bumping its national presence from six states up to 11. Now, analysts speculate that the combined revenue of Harvest Health and Trulieve "will surpass \$1.2 billion by the end of the year."² In other

words, it will become one of the biggest operators in the game.

“

[T]he long-term
benefits of
immediately
building
solid structures
in each key state
are vital to
continued
growth.

For those who are unfamiliar with Trulieve's business model, they operate according to something called the 'hub-and-spoke' model. Simple in concept and perfect for reaching such segmented markets with unique, state-determined obstacles, this approach leverages several regional offices, as opposed to operating in one headquartered location.

Companies like Trulieve are using this approach to strategically build large-scale operational functionality right out of the gate, and while this isn't the best approach for the companies looking to pinch pennies in the short-term, the long-term benefits of immediately building solid structures in each state are vital to continued growth.





Trulieve needs to figure out how to **combine** the different SOPs, tech stacks, and employees, all while striving to **improve** upon efficiencies

The upfront cost involved might deter some operators, specifically those with a short-term mindset. When long-term possibilities are neglected, assets that were once built on a solid foundation begin to shatter. This is especially true when taking federal legalization into account. Trulieve CEO Kim Rivers explains it best, stating that the company “think[s] about it more as a distribution play,” and that this is the first step toward creating “national distribution models” that will “help drive efficiencies in each region.”²

Now, it’s clear that Trulieve has made a move that strategically, financially, and geographically benefits them, but the next big question revolves around the execution. How will Trulieve integrate Harvest Health into their operations?

Though the acquisition is a massive win by Rivers and her team, it isn’t a home run until all the bases are cleared. Before they can dominate, Trulieve needs to figure out how to combine the different SOPs, tech stacks, and employees, all while striving to improve upon efficiencies, as Rivers previously stated.

As the space continues to shift and consolidate, it’s important to monitor situations like these so that they may provide a model for you and your own business. This type of cannibalistic expansion will continue to occur as the industry works through its growing pains, but as always, we’ll keep you updated along the way so you can feel armed with actionable knowledge.



DOMESTIC NEWS

LINKED
PAGE



Alabama Legislature votes to legalize medical marijuana

“Alabama’s State Legislature [voted to legalize medical marijuana](#) late Thursday, becoming the most recent state to possibly approve its use amid ongoing talks over revamping cannabis laws.”

Cannabis M&A surges in hot Pennsylvania market with \$400 million in deals

“Merger and acquisition activity is sizzling in Pennsylvania, with [more than \\$400 million worth of deals](#) announced since March alone[.]”

Minnesota Marijuana Legalization Bill Clears 12th And Final House Committee, Advancing To The Floor

“A bill to legalize marijuana in Minnesota has been approved by its final House committee and [will now advance to the floor.](#)”

INTERNATIONAL *REGULATIONS*

GERMANY



“Curaleaf International...Europe’s largest vertically integrated cannabis company, is pleased to announce that its wholly owned subsidiary, Adven GmbH (“Adven”), has launched its own range of medical cannabis products in Germany, Europe’s largest medical...”

SOUTH AFRICA



“Felbridge, a company incorporated in the Republic of South Africa, is pleased to announce that it has successfully exported its first shipment of cannabis in-vitro tissue culture to a licensed producer in North Macedonia. The shipment was despatched from the Cape...”

CANADA



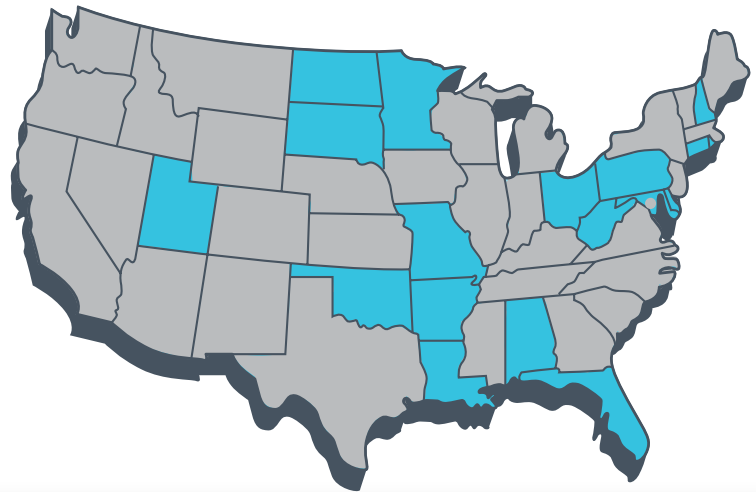
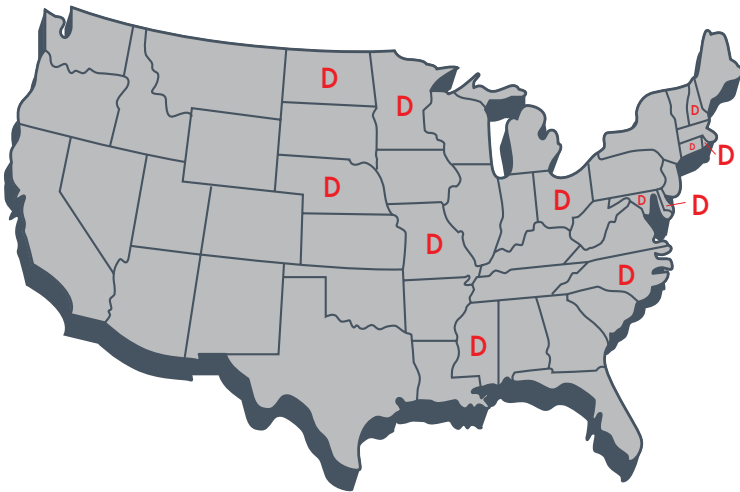
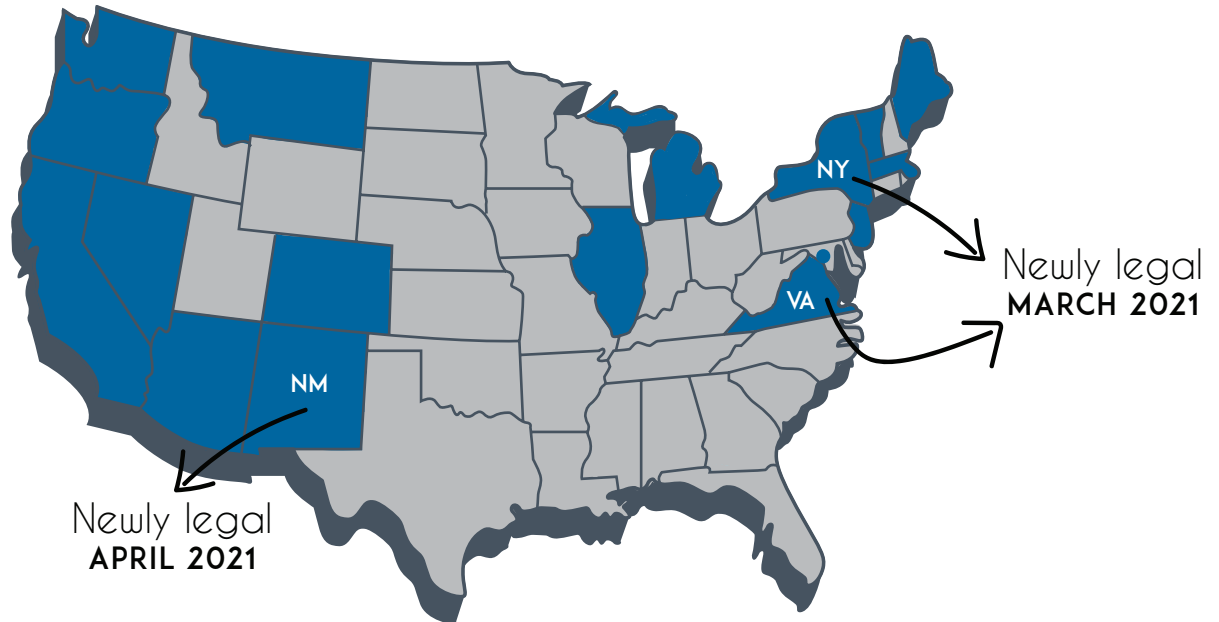
“Avicanna launches its initiative to supply major Canadian hospitals with its advanced RHO Phyto medical cannabis products supported by education, training, and patient support programs. Seven RHO Phyto products will be available for purchase at...”

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
WITH LIMITED THC



MEDICALLY LEGAL



THE HOUSING BOOM SPARKS INDUSTRIAL HEMP & BUILDING OPTIONS

Lumber futures prices rose the maximum amount allowed by the Chicago Mercantile Exchange (CME) for 42% of the trading days in April.³ The boom in the housing market has caused lumber prices to soar, increasing the average lumber price for building a new house by \$36,000 from last year.⁴

FUTURE TIMBER PRICES



The increased price is forcing consumers to take a closer look at alternative building materials. We believe that hempcrete is poised to emerge as the best alternative to the traditional wood-framed house. There are several companies in the United States and Canada that have been developing unique ways of using hemp hurd, water, and lime to generate hempcrete. Hemp hurd is the wood part of industrial hemp's stalk that's revealed after the fiber has been removed via decortication, and decortication is the process of separating the outside bast fibers from the hurd, of the plant. The remaining hurd is the main ingredient in most hempcretes.

There has been a 2.5% increase in industrial seed pricing this year, which could signal more farmers to turn to industrial hemp crops, supporting the rise of hempcrete as a viable building material. As we see it, there are several companies in the United States and Canada poised to take advantage of this historical opportunity as we see it. These are our favorites:

These
are links!



[JUST BIOFIBER](#)

[HEMPBLOCK USA](#)

[HEMPCRETE HOMES](#)

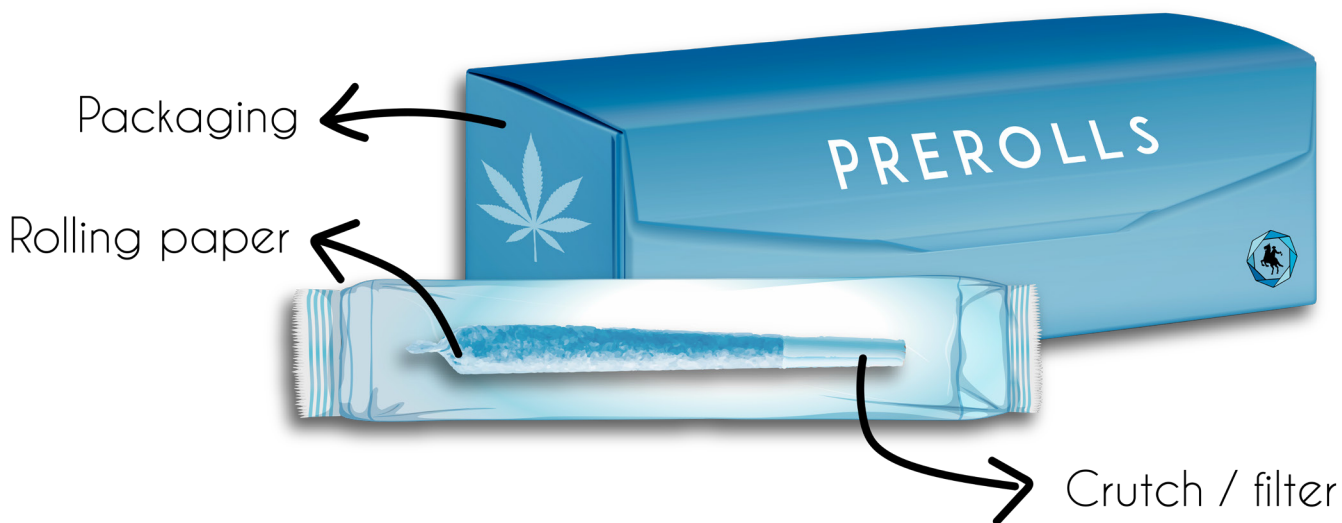
[HEMPITECTURE](#)



THE FUTURE OF LUMBER AND ITS EFFECT ON CANNABIS CONSUMERS

At the time of writing this, July 2021 lumber futures are trading at \$1540 per contract, which is a 337.5% increase in price from last year. The interesting thing about lumber future contracts is that they include both the finished lumber products, like as 2' x 4's for framing houses, along with pulp which is a byproduct of the milling process. The pulp is used to create paper, cardboard, corrugated cardboard, and other consumables. While the housing boom requires finished boards and is driving the price of lumber future contracts up, the pulp industry operates differently.

Typically, only half of the fiber used for paper manufacturing processes is derived sawmill pulp, and the other half comes directly from wood that was purposely harvested for paper.^{5,6} The glut of pine trees in the United States is escalating the stock price, helping cushion sawmill margins.⁵




The cannabis industry is heavily reliant on paper products to package and label goods. The main product we believe could be the most effected by the increase in lumber and pulp prices is the pre-roll market. The total domestic market for pre-rolls in 2020 was ~\$1.9 billion with ~200 million joints sold in the adult-use markets.

The average retail price is currently around \$10.00 for a 0.7 gram cannabis pre-roll.⁷ If processors experience a 300% increase in packaging cost for pre-rolls (including the rolling paper, filter, packaging, and label), the consumer will most likely have to foot the bill. This spike in pulp pricing will inevitably lead to an increase in price for paper products. Considering the uptick in online shopping this year leading to increased demand for cardboard, we recommend locking in packaging inventory for the summer to avoid any dramatic price increases.




SECTOR ANALYSIS*

	INDICES	3 MONTH	6 MONTH
	S&P 500	4.86%	18.44%
	DOW JONES	6.77%	12.77%
	NASDAQ	-5.84%	8.22%
	GLOBAL CANNABIS INDEX	-32.34%	51.45%
	AMERICAN CANNABIS STOCK INDEX	-30.77%	52.40%



“In the short run, the market is a
voting machine
 but in the long run, it is a
weighing machine.”⁸

*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	0.46%	12.84%
	TECHNOLOGY	-5.79%	11.83%
	INDUSTRIALS	10.43%	21.78%
	FINANCIALS	13.00%	35.19%
	CONSUMER CYCLICAL	-1.14%	20.36%
	CONSUMER NON-CYCLICAL	6.71%	10.67%
	BASIC MATERIALS	17.65%	42.01%
	ENERGY	14.53%	52.61%
	UTILITIES	1.15%	-1.30%
	ALTERNATIVE HARVEST ETF (MJ)	-19.52%	45.76%
	MULTI- STATE OPERATORS (MSOS)	-21.73%	33.51%

*Information retrieved from NCV and E*trade.





RAW MATERIALS



JUNE 2021

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

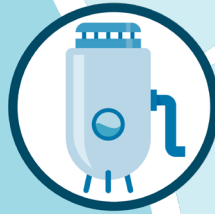


TESTING

RETAIL

We haven't seen inflation levels rise like this since 2008, which is why retail is a current hot topic of discussion. The talk of inflation escalated at the beginning of May when the Consumer Price Index reported a 4.3% increase in inflation from a year ago.⁹ The 4% increase is double what the Fed typically expects for inflation, which they believe should hover around 2% every year. This unexpected increase is set to affect every aspect of the supply chain for major industries, and this includes cannabis. The prices of the consumables needed to cultivate, process, extract, and manufacture products will increase, and this monetary increase will then be passed along to consumers. The cannabis industry hasn't experienced inflation like this since adult-use came into effect, so only time will tell how badly the cannabis space will be impacted.

MANUFACTURING



THE
BREAKING
POINT



DISTRIBUTION



RETAIL



CUSTOMER



BRAND SPOTLIGHT: KIVA™



Price Range:	\$10 - \$27
Target:	Cannabis users ages 25 - 45
Availability:	AZ, CA, IL, MI, NV, HI
Ownership Status:	Private

OUR RATING:



WHY WE LOVE THEM: The more brands, the more fun! Kiva's product lines are clear and attractive.

WHY WE DOCKED STARS: We can't come up with anything!

Divide and conquer.

It's easy to get overwhelmed when one company is offering a sea of products, even if all the products are slightly different. Think about Coca-Cola; imagine the confusion and buyers' hesitation if all the brands underneath their umbrella, ones like Dasani, Minute Maid, and Vitamin Water, were instead branded as Coca-Cola. The overlap in packaging, coloring, and stylistic elements would make the decision-making process a nightmare. Kiva has recognized what many other cannabinoid companies have not, which is that related diversification of a brand is key to ensuring that customers aren't bombarded by too many choices.



With a variety of branding styles and delicious flavors, Kiva Confections offers an array of cannabinoid infused sweets that appeal to every user. From mints to chocolate, from gummies to almond bites, Kiva has curated unique sub-brands with varying target markets, visuals and flavor profiles to segment product offerings. For the daring flavor enthusiasts looking for a strong high, there's the Lost Farm chews and gummies, and for those that want something refreshing yet balancing, the Petra mints offer the perfect solution. There's also Terra, the brand that exclusively offers savory chocolate bites, and Kiva's own house brand that caters to those looking for cannabis-infused chocolate bars. While each new product occupies a unique space in the market, the small Kiva logo found on the packaging of each sub-brand promises loyal Kiva consumers the same quality product.

Visit Kiva at kivaconfections.com



THE KEY TO CANNNA

THE CLINICAL ENDOCANNABINOID SYSTEM CONSORTIUM

The CESC is a non-profit organization that harnesses a virtual and flexible collaborative approach to scientific advancement in the cannabinoid industry.

Their “act first, talk later” operating principle has now led to a series of successfully disruptive innovations in the cannabis science space.



**START COLLABORATING
WITH US**

GET STARTED

A LIMITED EDITION MULTIPART SERIES

WHAT IS THE CESC?

Why we created it

Almost a century of cannabis prohibition has dramatically hindered scientific discovery and contributions to original knowledge about the effects and utilities of its botanical products. Academic science, which traditionally would have been expected to play an active role in this endeavor, has instead been limited by funding constraints and the study of NIDA-provided cannabis that does not represent what is available in the market.

Currently, it is unreasonable to assume that such entities can pivot quickly and effectively.

There is a lack of any institutional knowledge base or understanding of the parallel, real-world advances now emerging from alternative community-based efforts as the tide turns towards widespread normalization and legalization of cannabis. Our non-profit (501c3) organization provides a compelling and complimentary alternative. We represent the ability to harness a more virtual and flexible collaborative approach to scientific advancement predicated on our team's successful track record, as our members have been operating in the cannabis and cannabinoid science space for almost a decade and in the biotechnology industry and clinical arena across multiple decades. We have embraced an "act first, talk later" operating principle that has now led to a successful series of disruptive innovations in the cannabis science space.

How we break down the cannabis industry's product taxonomy

CANNABIS INDUSTRY SEGMENT	Lifestyle			MEDICINAL: HEALTH & DISEASE			
				Dietary Supp- lement	Drug		
MODE / ROUTE OF ADMINISTRATION	Inhaled	Ingested	Applied	Ingested	Inhaled	Ingested	Applied
CLASS OF STARTING MATERIAL	Hemp						
	Cannabis						
PRODUCTION SCALE	Boutique / Artisinal / Craft						
	Commercial						
	Agricultural Commodity						
PRODUCT GOAL	RBS						
	(Processed) Botanical Substance						
	Botanical Product						
				NDI	API		



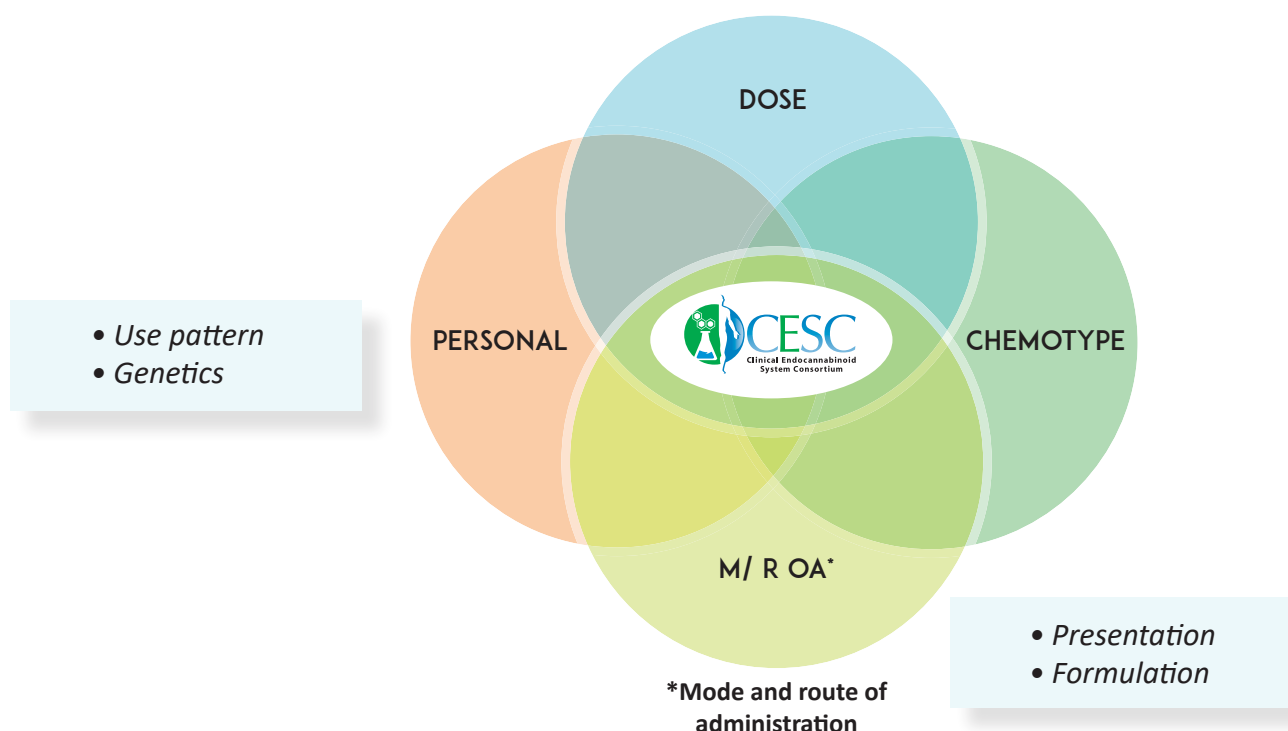
How we operate

As part of our intent to remain “meta”, the CESC is gaining acceptance and credibility as a neutral organization that performs product validations. Our position provides us with the foundation to accept grants and donations to carry out our initiatives and objectives. This, in turn, brings benefit to supply chain participants and to the greater community. We envision a validated product “formulary” that other industry participants and consumers can access. Our objective creates a reliable corpus of products to access for study or dependable use. Furthermore, we propose to identify products in this formulary by providing a certification mark that also communicates complex product content information in an easily understood format (the ChemoMark™).

Why we remain “meta”

As a nonprofit organization, the CESC positions itself as impartial and neutral to vested interests in the cannabinoid botanical industry. This permits our organization to develop best practices and guidance without being directed by special interests or stakeholders with private agendas. Our founders value their ability to contribute to original knowledge and anchor this with a long track record in bioscience and medicine. The CESC considers its non-profit status to be a general benefit to the cannabis industry as it establishes collaborations with private, for-profit industry participants and sponsors. We understand cannabis industry product taxonomy.

How we study the overlapping parameters, influencing effects & adverse events



Our Initiative

The CESC has established primary clinical programs that investigate the efficacy of cannabinoid botanical products. These clinical correlates initiatives center on The Dosing Project™, a Phase IV approach to clinical study. To complement a classical medicinal phased development program, we deploy a paradigm-shifting clinical study approach. The Dosing Project™ initiates our investigations by defining product dose-effect relationships for general neurophysiological indications, such as mood, sleep, pain, and appetite. Further clinical studies delve into evaluations of mood, concentration, and cognitive functioning using EEG and other biomarkers in a more traditional, phased-trial approach. We have also initiated clinical programs on the neuro-inflammatory processes affected by cannabinoid botanical products and their clinical effects on Alzheimer's, autism, traumatic brain injuries, and nociceptive and neuropathic pain.

Our Focus

Our view is that the current regulatory climate surrounding the evolving acceptance and legalization of cannabinoid botanical products focuses primarily on aspects of product safety. Testing of such products involves determination of adulterants, including pesticides, heavy metals, residual solvents, and microbial bioburden. The CESC considers an investigation of adverse events (AE) to be an unmet product safety need for cannabinoid botanical products. This still leaves a big gap in the industry as far as determining product quality attributes. Such characteristics include chemotype, stability, and anticipated effects. From a producer perspective, understanding and appropriately exploiting such parameters helps with development decisions and offers opportunities for market segmentation and increases in market share. We therefore have positioned our investigations in this arena.

Our Study

Medicine development has long been the purview of white men. Historically, they provided the predominant manpower to advance these efforts. Additionally, white men provided the predominant group of subjects for clinical studies. We now understand the importance of stratifying such investigations to include women, different ethnic groups, and different age groups in order to better understand and fine tune the administration of medicines to individuals. This appreciation of study stratification has been in the DNA of the CESC since its founding. Incorporating gender, ethnicity, and age group into our ongoing studies of cannabinoid botanical products is integral and essential in our programs.

WANT TO GET INVOLVED?

[LEARN MORE](#)[DONATE](#)

Visit the CESC at thecesc.org





HOT IN THE NEWS

A Trulieve to Acquire
Harvest Health
for \$2.1

Billion in Stock

B JAZZ PHARMA
COMPLETES
ACQUISITION
OF CANNABIS
BIOTECH COMPANY
GW PHARMA

C INDUSTRIAL
HEMP FARMING
IN ARKANSAS
SLOWLY BLOOMS

D TOP POLITICAL AIDE TO TEXAS
AGRICULTURE COMMISSIONER SID MILLER
ARRESTED IN ALLEGED SCHEME
TO TAKE MONEY IN
EXCHANGE FOR HEMP LICENSES

E “As it stands, you can’t
trademark a product that’s not
currently legal
under federal law—like
marijuana or psychedelics. But a
CBD beverage company is
appealing that rule...”

G “In a stereotype-busting
new study, researchers found that
frequent marijuana consumers
are actually more likely to be
physically active compared to their
non-using counterparts.”

F HEAD OF TOP FEDERAL DRUG AGENCY
SAYS IT’S TIME
TO CONSIDER
DECriminalIZATION

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?*

Welcome to The *ABCs* of cannabinoid manufacturing

Provided to you by
Hellma®

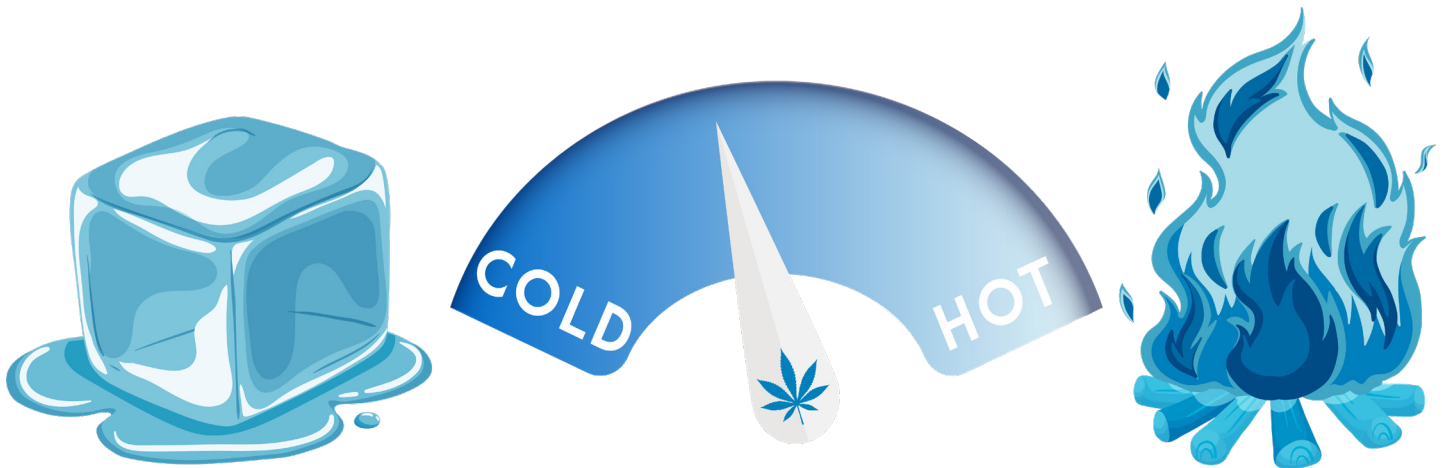
CANNABIS MANUFACTURING FOR THE 21ST CENTURY

Part 6: Overview of Extraction Methodologies & Monitoring

The separation of the wide array of compounds in *cannabis sativa* L. is becoming more important as regulations on cannabinoid containing products develop and become more stringent. There are a few common solvent methodologies used for extraction in the cannabis industry.

Alcohol extraction uses ethanol and is one of the most common and efficient methods of extracting the cannabinoids. The process can be done in either warm or cold ethanol. In warm or room temperature ethanol, the cannabinoids dissolve quickly leading to a high yield of cannabinoids. For warm ethanol extraction, the initial step is to soak the raw material in Ethanol to pull off the trichomes. In cold ethanol extraction, the first step is to chill the ethanol down to -40°C before introducing the cold ethanol to the cannabis biomass.

Afterwards, the mixture is collected, filtered and the solvent is evaporated and reclaimed. In warm ethanol extractions, additional purification steps, such as winterization, are necessary. The biggest issue with scaling up this particular process is the ethanol itself. Because of its flammability, it is rated as a Class 1 Division 2 solvent, which limits the amount of Ethanol that can be stored on a particular site.[1] The evaporation of the solvent from the enriched liquid also requires specialized equipment to efficiently evaporate the ethanol to be reused in a closed-loop process.



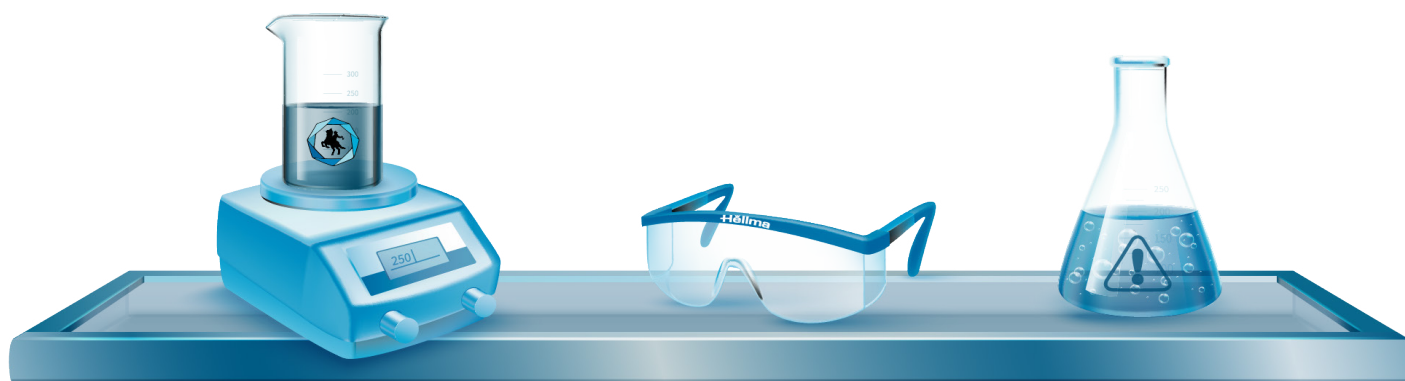
Hydrocarbon extraction generally uses either propane or butane. Similar to the cold alcohol method, the hydrocarbon solvent is cooled down to below its boiling point so that it is in liquid form. The initial extraction washes the raw material with the cold hydrocarbon solvent. The hydrocarbons with the products of interest can be separated by flowing the mixture into a separate area and raising the temperature. [2] With low boiling points, the hydrocarbons evaporate well below the point of degradation of some of the more volatile compounds, leaving behind the cannabinoids, terpenes, flavonoids and waxes.



CANNABIS MANUFACTURING FOR THE 21ST CENTURY

Part 6: Overview of Extraction Methodologies & Monitoring

After the separation of the hydrocarbons from the extract, the propane or butane can be recirculated through the biomass creating a closed-looped system. The result is an extract that is relatively free of inactive plant matter such as chlorophyll, fats and lipids. Inline de-waxing can also be accomplished using the same hydrocarbon solvent thereby entirely removing the need for winterization.



Despite this advantage, hydrocarbon extraction is losing popularity for several reasons including, but not limited to, regulations for handling propane/butane and stigma attached to using a hazardous chemical for the extraction.

[3] Similar to alcohol extraction, hydrocarbons are flammable, but they are more stringently classified as Class 1 Division 1. Another difficulty is that many places are banning the use of hydrocarbon extraction, making the setup and scale-up of this process unachievable. [4]

In the next issue, we'll discuss the final extraction method: supercritical CO₂. Its many advantages make it a promising option for those looking to dive into extraction.

MISSED PART FIVE?

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.



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