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Above: FCM Global's Proprietary VerdeCann Strain

World Health
Organization to Review
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The Most Impactful
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A Halifax entrepreneur says he can source the raw materials for his line of plastic prosthetic limbs from the country's dire new problem with legal cannabis over-packaging.

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WORLD HEALTH ORGANIZATION NOVEMBER MEETING TO REVIEW CANNABIS

The organization is currently preparing for a review of cannabis scheduling and classification at its November meeting with a recommendation from this summer that CBD had no addictive properties.

REPOST: MARGUERITE ARNOLD / CANNABIS INDUSTRY JOURNAL / OCTOBER 30, 2018

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In a sign that cannabis reform is now on the march at the highest level of international discussion, the World Health Organization (WHO) will be meeting in November to formally review its policies on cannabis. This will be the second time in a year that the organization has met to review its policies on the plant, with a direct knock-on effect at the UN level.

According to documents obtained by Cannabis Industry Journal, including a personal cover letter over the committee's findings submitted to the Secretary-General Antonio Guterres by Dr. Tedros Adhanom Ghebreyesus, Director-General of the WHO, the November review will "undertake a critical review of the...cannabis plant and resin; extracts and tinctures of cannabis."

What Exactly Will The WHO Review?

The November meeting will follow up on the work done this summer in June – namely to review CBD. According to these recommendations, the fortieth meeting of the Expert Committee on Drug Dependence (ECDD) in Geneva will include the following:

- Pure CBD should not be scheduled within International Drug Control Conventions.
- Cannabis plant and resin, extracts and tinctures of cannabis, Delta-9-THC and isomers of THC will all be reviewed in November.
- Finally, and most cheerily, the committee concluded that "there is sufficient information to progress Delta-9-THC to a critical review...to address the appropriateness of its placement within the Conventions." In other words, rescheduling.

Industry and Patient Impact

Translation beyond the diplomatic niceties?

The drug war may, finally, and at a level not seen for more than a century, come to a close internationally, on cannabis.

Here is why: The WHO is effectively examining both the addictive impact and "harm" of the entire plant, by cannabinoid, while admitting, already that current scheduling is inappropriate. And further should not apply to CBD.

This also means that come November, the committee, which has vast sway on the actions of the UN when it comes to drug policy, is already in the CBD camp. And will finally, it is suspected, place other cannabinoids within a global rescheduling scheme. AKA removing any justification for sovereign laws, as in the U.S., claiming that any part of cannabis is a "Schedule I" drug.

What this means, in other words, in effect, is that as of November, the UN will have evidence that its current drug scheduling of cannabis, at the international level, is not only outdated, but needs a 21st century reboot.

International Implications

This also means that as of November, globally, the current American federal justifications and laws for keeping cannabis a Schedule I drug, and based on the same, will have no international legal or scientific legitimacy or grounding.

Not that this has stopped destructive U.S. policies before. See global climate change. However, and this is the good news, it is far easier to lobby on cannabis reform locally than CO2 emissions far from home. See the other potentially earth-shaking event in November – namely the U.S. midterm elections.

The global industry, in other words, is about to get a shot in the arm, and in a way that has never happened before in the history of the plant.

And that is only good news for not only the industry, but consumers and patients alike. 

CONGRESS IS GOING TO MAKE MARIJUANA MOVES

REPOST: Paul Armentano / Opinion - The Hill / November 14, 2018

Despite majority public support in favor of marijuana legalization, and super-majority support in favor of medical cannabis access, members of Congress have nonetheless been reticent to move forward with any significant changes to federal pot policy. That is, until now.

Following last week's midterm election results, legislative leaders in both the House and Senate appear ready to take on the cannabis issue. On Friday, Senate Majority Leader Mitch McConnell (R-Ky.) pledged that language lifting the federal government's longstanding ban on industrial hemp will be included in the engrossed version of HR 2: The Agriculture Improvement Act of 2018 (the farm bill) — must-pass legislation that is currently being finalized in conference committee.

Speaking with reporters, the GOP leader said: "If there's a Farm Bill, it'll be in there. I guarantee that. ... I don't want to overstate this – I don't know if it's going to be the next tobacco or not – but I do think it has a lot of potential. And as all of you already know, in terms of food and medicine but also car parts. I mean, it's an extraordinary plant."

The hemp-specific provisions — which were approved in the Senate's version of the farm bill, but were not included in the House's language — amend federal regulations to expand and facilitate state-licensed hemp production, research, and commerce.

The language also for the first time amends the federal Controlled Substances Act of 1970 so that industrial hemp plants containing no more than 0.3 percent THC are no longer classified as a schedule I controlled substance. This change would green light states to regulate the crop's production and retail sale free from federal interference. It's a common-sense policy change that is long overdue. According to the Congressional Research Service, "The United States is the only developed nation in which industrial hemp is not an established crop."

Also on Friday, incoming House Rules Committee Chair Jim McGovern (D-Mass.) said that he anticipates several pieces of marijuana reform legislation to move in the Democratic-led House of Representatives in 2019. As reported by "The Boston Globe," McGovern promised to permit federal lawmakers to debate and vote on marijuana-related amendments when he assumes control of the Committee in January. "Unlike my predecessor, I'm not going to block amendments for marijuana," he said. "Citizens are passing ballot initiatives, legislatures are passing laws, and we need to respect that. Federal laws and statutes are way behind."

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Rep. McGovern replaces outgoing Rules Chair Pete Sessions (R-Texas), who lost his re-election bid to Democrat Colin Allred. Jeff Sessions used his position as chairman of the House Rules Committee to block House floor members from voting on over three-dozen marijuana-related amendments during his leadership tenure.

His actions single-handedly killed a number of popular, bipartisan-led reforms — such as facilitating medical cannabis access to military veterans and amending federal banking laws so that licensed marijuana businesses are treated like other legal industries.

Rep. McGovern indicated that he would prioritize legislative measures that limit federal interference in legal marijuana states, expand medical cannabis access for veterans, and amend federal banking restrictions on the legal cannabis industry.

“This just seems like common-sense stuff,” McGovern said. “Especially on the issue of medical marijuana — people who are opposed to that are just on the wrong side of public opinion, overwhelmingly. It’d be nice if, every once in a while, Congress acted in a way that people wanted. I know that may seem like a radical idea, but come on.” 🌿



LEAFLY

THE MOST IMPACTFUL CANNABIS STUDIES OF ALL TIME

REPOST: DAVID BIENENSTOCK / NOVEMBER 5, 2018

The following compendium of landmark cannabis studies is exclusively focused on top-level research that either fundamentally advanced our understanding of the plant's therapeutic properties, or thoroughly debunked some pernicious piece of official misinformation—such as “smoking weed gives you lung cancer.”

But that's only half the story when it comes to the intersection of science and cannabis. So before we get to the good stuff, let's start with an unfortunately typical example of the kind of spurious evidence that has been consistently used over the last hundred years to support the government's all-out war on cannabis.

Our story begins in 1974, when Dr. Robert Galbraith Heath published research conducted at Tulane University, where he chaired the Department of Psychiatry and Neurology.

Today, the late Dr. Heath is a controversial figure in the world of neuroscience, largely due to his pioneering efforts to study deep brain stimulation (a.k.a. electro-shock) as a “conversion therapy” for homosexuals, and his willing participation in illegal, CIA-led human experiments of a “brainwashing” drug called bulbocapnine. But at the time, his credentials remained impeccable.

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And so, when Heath produced findings supposedly showing that “the active ingredient in marijuana [THC] impairs the brain’s circuitry,” the press dutifully ran headlines claiming “Pot Causes Brain Damage” without a trace of skepticism. While anti-cannabis politicians like then California Governor Ronald Reagan immediately seized on the study as evidence that cannabis was far too dangerous to even consider legalizing.

Like many federally funded studies of the era, Heath’s research was deeply flawed. In *Smoke Signals: A Social History of Marijuana*, author Martin Lee calls out his exceedingly small study of rhesus monkeys as “a textbook case of scientific fraud.”

“Shackled in air tight gas masks, Heath’s monkeys were [regularly] forced to inhale the equivalent of 63 high-potency marijuana cigarettes in five minutes. Lo and behold, the primates suffered brain damage from suffocation and carbon monoxide poisoning, but Heath attributed the results to marijuana toxicity”

Heath’s findings were never replicated, and several prominent follow up studies—including one at the National Center for Toxicology Research—directly repudiated his conclusions.

Then in 2003, the US Department of Health and Human Services was granted a patent on “cannabinoids as neuroprotectants,” based on evidence that compounds found in the cannabis plant not only don’t cause brain damage, they’re actually effective in “limiting neurological damage following...stroke and trauma, or in the treatment of neurodegenerative diseases, such as Alzheimer’s disease, Parkinson’s disease and HIV dementia.”

To this day, cannabis remains a Schedule 1 narcotic—a categorization that flies in the face of not just the latest cutting-edge research into the plant’s incredible medicinal potential, but also some of the oldest medical texts in existence. For example, *The Divine Farmer’s Herb Root Classic* (2727 BC)—widely considered the world’s oldest pharmacopeia—lists cannabis among the “supreme elixirs of immortality,” and recommends it as a superior treatment for “constipation, ‘female weakness,’ gout, malaria, and rheumatism.”

And as our list of landmark cannabis studies makes clear, that’s just for starters.

Indian Hemp Drugs Commission (1894)

In 1893, India was under British rule, and the colonial government became concerned about the amount of cannabis (i.e., “hemp drugs”) being consumed by the locals.

The result was a massive research paper (over 3,000 pages), with recorded testimony from almost 1,200 “doctors, coolies, yogis, fakirs, heads of lunatic asylums, bhang peasants, tax gatherers, smugglers, army officers, hemp dealers, ganja palace operators, and the clergy.” Nearly all of the data in the seven volume report bolstered two key conclusions: moderate cannabis consumption is either relatively harmless or beneficial, and cannabis prohibition would be supremely unjust.

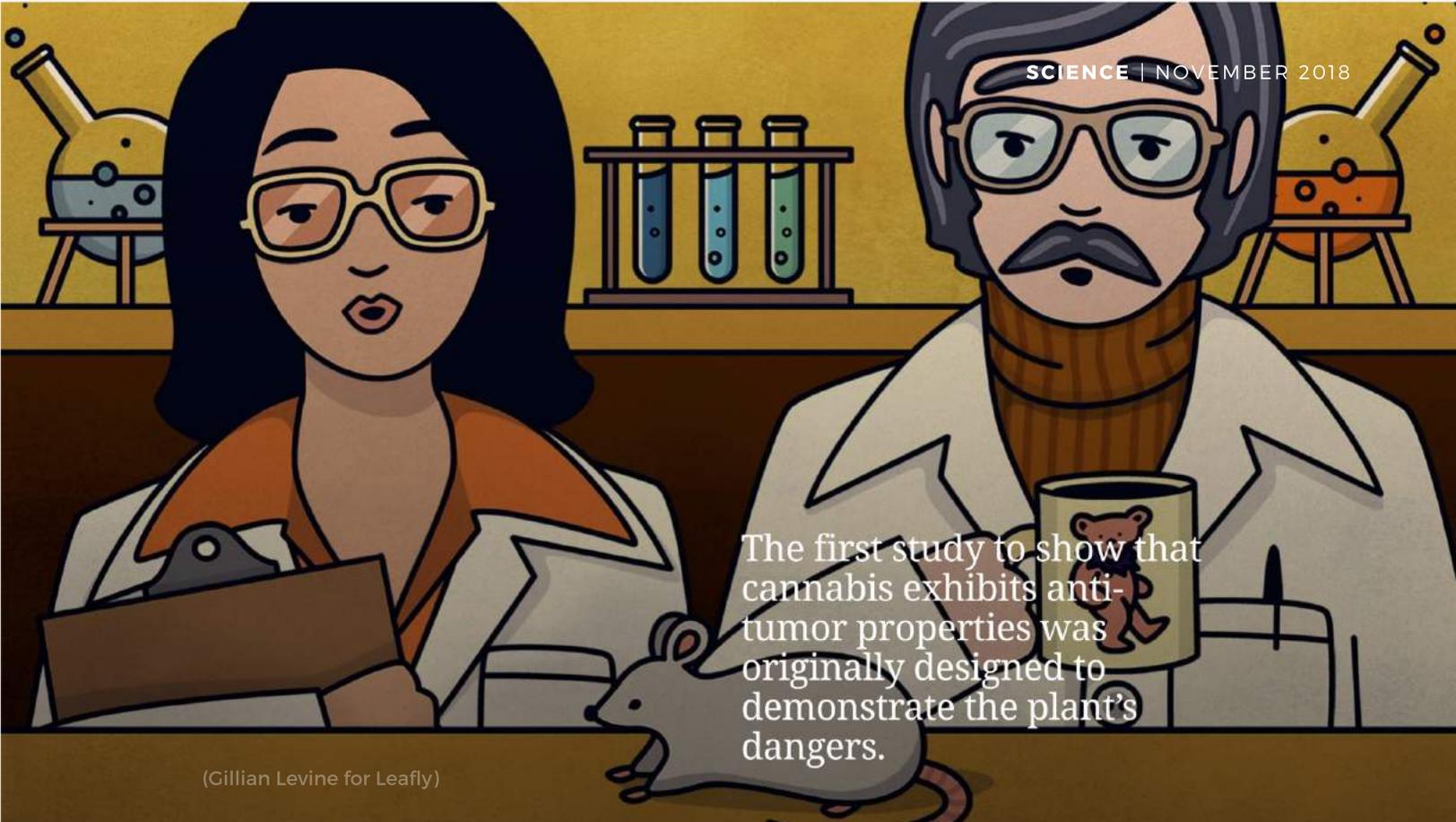
“To forbid or even seriously to restrict the use of so gracious an herb as hemp would cause widespread suffering and annoyance,” the report concluded. For the next 50 years, this research would stand as the most thorough and scientifically rigorous available.

The Laguardia Report (1944)



In direct response to the Reefer Madness-era misinformation campaigns of Harry J. Anslinger (head of the Federal Bureau of Narcotics), New York City mayor Fiorello La Guardia commissioned a blue ribbon panel of leading doctors, psychiatrists, psychologists, pharmacologists, chemists and sociologists, and tasked them with making a thorough investigation of cannabis based on a comprehensive review of all available scientific literature, plus primary research.

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(Gillian Levine for Leafly)

Released as The La Guardia Report, the landmark study earned the endorsement of the prestigious New York Academy of Medicine, while unambiguously declaring that the prohibition of cannabis fails the smell test.

“Marijuana, like alcohol, does not alter the basic personality,” the report’s authors concluded. “Marijuana does not of itself give rise to antisocial behavior. There is no evidence to suggest that the continued use of marihuana is a steppingstone to the use of opiates. Prolonged use of the drug does not lead to physical, mental, or moral degeneration, nor have we observed any permanent deleterious effects from its continued use. Quite the contrary, marihuana and its derivatives and allied synthetics have potentially valuable therapeutic applications which merit future investigation.”

The Discovery of THC (1964)

When a team of Israeli researchers led by Dr. Raphael Mechoulam first discovered THC in 1964 and identified it as the primary psychoactive compound found in the cannabis plant, that was not just a breakthrough in our collective understanding of cannabis—it also led to a series of breakthroughs in our understanding of how the human body functions.

The first study to show that cannabis exhibits anti-tumor properties was originally designed to demonstrate the plant's dangers.

By the late 1980s, this would include the discovery of an entirely new system in the body—the endocannabinoid system—which can be thought of as your “root-level operating system,” a kind of central processing unit that regulates and alters the functioning of many other important systems and keeps them in balance.

Leafly’s comprehensive explainer on the endocannabinoid system breaks down exactly how it works, and why its discovery was groundbreaking not just for medicinal cannabis, but for medicine in general.

The Shafer Commission Report (1972)

After studying cannabis for more than two years, a team of experts hand-picked by President Richard M. Nixon returned with a set of recommendations that started with immediately removing all criminal penalties for cannabis, including “casual distributions of small amounts,” since “neither the marijuana user nor the drug itself can be said to constitute a danger to public safety.”

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“Criminal law is too harsh a tool to apply to personal possession even in the effort to discourage use...It implies an overwhelming indictment of the behavior which we believe is not appropriate. The actual and potential harm of use of the drug is not great enough to justify intrusion by the criminal law into private behavior, a step which our society takes only with the greatest reluctance.”

Known collectively as the Shafer Commission, the eminent researchers that compiled the report knew all-too-well that their findings flew in the face of the government’s official position on legalization, but hoped nonetheless their comprehensive research would spark a fact-based debate of the evidence that would in turn lead to significant reform.

Instead, Nixon attacked the commission and ignored its recommendations, before pushing the whole thing down the memory hole. The very next year, he created the Drug Enforcement Administration (DEA) and charged them with waging “all out war” on cannabis.

Cannabis Shrinks Tumors (1974)

The first ever study to show that cannabis exhibits anti-tumor properties was originally designed to demonstrate the plant’s dangers, specifically harm to the immune system. Funded by NIDA and a grant from the American Cancer Society, researchers at the Medical College of Virginia implanted tumors into mice, which were then “treated for 10 consecutive days with delta-9-THC, beginning the day after tumor implantation.” Presumably to show that THC makes cancer grow faster.

Instead, when the research was published in The Journal of the National Cancer Institute, it showed that “mice treated for 20 consecutive days with THC and CBN had reduced primary tumor size.”

Great news, right?

The study’s authors were certainly ready to investigate this exciting development further, but instead, NIDA cut off all of their funding and made every effort possible to suppress their research. As a result, only a single newspaper article, published August 18, 1974 in the local section of the Washington Post, covered this breakthrough discovery.

It would take nearly three decades before Dr. Manuel Guzman, professor of biochemistry at the University of Madrid, managed to follow up on the original 1974 experiments, with similar results. In the March 2000 issue of the journal Nature Medicine, Guzman reported that cannabinoids (like THC) not only shrink cancerous tumors in mice, they do so without damaging surrounding tissues.

Cannabis Treats Nausea Caused by Chemotherapy (1975)

Harvard Medical School Associate Professor Dr. Lester Grinspoon first started researching cannabis back the 1960s, in an effort to convince his best friend, famed astronomer Carl Sagan, to stop smoking so darn much of the stuff.

Quickly, however, Grinspoon realized the case against cannabis was all based on government propaganda—an insight he explored in depth in a bestselling book called *Marihuana Reconsidered* (1971).

Ever since, the good doctor has been a leading voice for medical cannabis. He also witnessed the plant’s therapeutic power firsthand when his son Danny was diagnosed with leukemia at age 15, as he explained in a personal essay on his life’s journey with the plant.

“On a normal day of chemotherapy, I hoped we could make it home from the hospital before Danny’s vomiting would start, and we always had to put a big bucket next to his bed. But the first time he tried taking a few puffs prior to a round of treatments, he got off the gurney and said, ‘Mom, there’s a sub shop in Brookline. Could we stop for a sub-sandwich on the way home?’ And all I thought was, ‘Wow.’

Dr. Grinspoon eventually convinced the head of Boston Children’s Hospital’s oncology department to undertake a 1975 study (published in the *New England Journal of Medicine*) that for the first time demonstrated the efficacy of THC for nausea and vomiting associated with chemotherapy.

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(Gillian Levine for Leafly)

Cannabis Helps AIDS Patients Without Serious Side Effects (1997)

Throughout the AIDS crisis, Mary Jane Rathburn volunteered as a nurse's assistant. While making the rounds in local hospital wards, she would discreetly provide home-baked cannabis-infused "magically delicious" brownies for free to those in need.

Eventually, "Brownie Mary's" tireless public service caught the eye of Dr. Donald Abrams, now the head of oncology at San Francisco General Hospital. Inspired by her example, Abrams set out to prove via science what he'd already seen with his own eyes. Namely, that cannabis is a uniquely effective medicine for those suffering with AIDS-related nausea.

In 1997, after a long and bitter battle with the federal government, Abrams at last secured almost one million dollars from NIDA to conduct clinical trials of the short-term safety of cannabinoids in HIV infection. In time, he would publish a string of studies showing that cannabis given to HIV patients "did not hurt the immune system, did not increase viral load, did not negatively interact with the protease inhibitors, and actually did facilitate increased caloric intake as well as weight gain."

Cannabis Doesn't Cause Lung Cancer (2006)

Dr. Donald Tashkin, a prominent pulmonologist at the University of California at Los Angeles, has spent over forty years studying the effects of cannabis on the lungs. When some of his earliest research established that the plant's tar contains cancer-causing chemicals as potentially harmful as tobacco, Tashkin perhaps understandably jumped to the conclusion that smoking cannabis regularly must significantly damage the lungs.

But in 2006, with funding from the National Institute on Drug Abuse, he led the largest case-control study ever done on the subject, and rather unexpectedly concluded that smoking cannabis—even frequently and in large amounts—does not lead to lung cancer.

The largest case-control study ever done on the subject unexpectedly concluded that smoking cannabis—even frequently and in large amounts—does not lead to lung cancer.

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Those findings were “against our expectations,” according to Tashkin:

“We hypothesized that there would be a positive association between marijuana use and lung cancer, and that the association would be more positive with heavier use. What we found instead was no association at all, and even a suggestion of some protective effect.”

The study not only debunked a powerful anti-cannabis talking point, it strongly indicated that the plant has powerful medicinal properties.

Cannabis Reduces Opioid Overdoses (2014)

When it comes to cannabis and the opioid epidemic currently wreaking havoc in America, there’s basically two schools of diametrically opposed thought: Either cannabis fuels the current crisis via the gateway drug effect, or cannabis has the potential to help immensely by providing a far safer alternative for pain relief as well as a potential pathway out of addiction.

For starters, the so-called “gateway theory” has been so roundly debunked that even the DEA gave up on it.

And more importantly, studies have consistently shown that opioid abuse goes down significantly in places with access to legal cannabis. Much of this drop is attributable to those suffering with chronic pain or other conditions treatable with opioids who choose to use cannabis instead. A 2011 study headed by Dr. Donald Abrams also found that cannabis makes opioid drugs more effective, allowing smaller opioid doses to provide the same level of pain relief, with correspondingly lowered side effects and danger of dependence.

Marcus Bachhuber, assistant professor of medicine at the Montefiore Medical Center in New York City, first started hearing about this phenomenon from patients more than fifteen years ago.

In 2014, he published research in the journal *JAMA Internal Medicine* that showed between 1999 and 2010, states with legal medical cannabis averaged almost 25% fewer opioid overdose deaths.

Since that landmark study, many other papers have bolstered the argument that cannabis can play an important role in terms of harm reduction when it comes to prescription drug abuse—including two new studies (both published in the May 2018 issue of *JAMA Internal Medicine*) showing that when states legalize cannabis there’s a marked drop in opioid prescriptions. According to W. David Bradford, an economist at the University of Georgia and an author of one of the studies.

“In this time when we are so concerned—rightly so—about opiate misuse and abuse and the mortality that’s occurring, we need to be clear-eyed and use evidence to drive our policies. If you’re interested in giving people options for pain management that don’t bring the particular risks that opiates do, states should contemplate turning on dispensary-based cannabis policies.”

Cannabis vs. PTSD (Ongoing)

Dr. Sue Sisley says she was abruptly fired in 2014 from a faculty position at the University of Arizona when her long planned study of cannabis as a treatment for PTSD became a political hot button among local politicians. Sisley ultimately prevailed, and now serves as one of two principal investigators in a multi-site study sponsored by the Multidisciplinary Association for Psychedelic Studies (MAPS) and funded by a \$2.1 million grant from the Colorado Department of Public Health and Environment.

The world’s first controlled clinical trial evaluating smoked medical cannabis as a treatment for PTSD is a triple-blind, outpatient, randomized, placebo-controlled study of 76 combat veterans randomly assigned either a high-THC strain, a high-CBD strain, a 1:1 THC/CBD ratio strain, or a placebo. Currently in its third year, the study has proceeded well, but in the meantime, PTSD-related suicides remain at epidemic levels among US combat veterans.

CBD Stops Seizures (Ongoing)

In direct response to a flood of inquiries from parents of epileptic children, the US federal government in 2014 quietly fast-tracked a trial of cannabidiol (CBD) as a treatment for seizure disorders, proving that political pressure can indeed push them to approve studies into the potential benefits of cannabinoids.

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But while many advocates sought to test whole-plant or full-spectrum medicines, the study has been strictly limited to a single compound found in cannabis—not coincidentally one supplied in “purified” form by GW Pharmaceuticals, which also funded the study, and is currently seeking FDA approval to sell the a prescription CBD medicine called Epidiolex.

In May 2018, the New England Journal of Medicine published an update on this ongoing research showing that patients taking just 20mg of CBD per kilogram of body weight had 42% fewer seizures, on average, compared with a 17% reduction in the placebo group. According to a comprehensive report on the study from Leafly’s Ryan Basen, these extremely promising results have GW Pharmaceutical’s CBD drug on track for imminent FDA approval.

“If approved, Epidiolex would become the first medication derived from the cannabis plant allowed in the US. The FDA has previously approved synthetic cannabis medications, which more closely resemble tetrahydrocannabinol (THC), but nothing plant-derived nor anything featuring CBD.

Sativex, a GW Pharma product that incorporates both THC and CBD, has been approved for medical use outside the U.S. Epidiolex features a solution of 100 mg/ml of CBD dissolved in sesame oil, ethanol, sweetener, and a flavoring agent, according to the FDA review. The medication is harvested from cannabis plants specifically bred for medical purposes, with high CBD concentration, according to a GW Pharmaceuticals report.”



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NEW STUDY:

MEDICAL CANNABIS FOR PETS

'Will Hopefully Contribute to Legalization Everywhere'

REPOST: SARA RITCHIE / CIVILIZED / NOVEMBER 9, 2018

One of the hottest topics in cannabis culture today is letting pets use pot. As more people are looking for more natural treatments for their healthcare, many pet owners are hearing about the potential benefits that cannabis offers and wondering if it can be applicable for their furry friends.

Civilized recently spoke with Samantha Wormser - Rescue Manager for Pet Conscious and a spokesperson for Canna-Pet, which makes CBD-infused treatments for cats and dogs. However, she says the word "treat" has to be used carefully.

In 2016, the U.S. Food and Drug Administration (FDA) sent a warning letter to Canna-Pet about their marketing practices. The issue was in Canna-Pet claiming to "treat" health ailments.

The FDA had concerns about its website content and labelling specifically in respect to the fact the company's claims were around treating medical conditions and therefore the product would be considered a drug.

As a result, Canna-Pet changed their wording to state it can 'help' with certain ailments, which alleviated the FDA's concerns.

According to Sam, there is a laundry list of ailments that the cannabis extract CBD can help with, including epilepsy, seizures, cancer and tumour growth, anxiety (particularly in pooches), allergies, and skin irritations.

CONTINUED ON PG. 16

“Some people think when you’re talking about CBD, that the person or animal will be getting high,” Wormser said. “However, CBD does not produce a high or intoxication. The products we offer have none of the psychotropic side effects and so many positive health impacts when dealing with certain ailments.”

In Sam’s work with rescue animals, she’s seen it be very successful in treating animals that have been abused to address pain and inflammation.

Canna-Pet’s company started as a result of its owner Don Goldfarb’s love for his rescue cat Mariano, who was experiencing gastro-intestinal issues. While researching hemp during his studies at MIT, Goldfarb created a product that helped Mariano. After distributing among friends and family with ailing pets, a business was born.

“The idea of using components of cannabis to treat our pets has come a long way since we started five years ago,” Wormser told Civilized. “Initially, we weren’t even able to ship to some states such as Colorado or Utah. The stigma around it was so strong, that we had a really hard time getting media to even talk about our product as they all had the connotation of it being marijuana.”

She shared that while the general public seem to be becoming more comfortable and receptive to the idea that cannabis has health benefits, more needs to be done to destigmatize CBD as a treatment option.

While clinical studies on the impact of CBD and animals have been limited, there have been recent advancements and more studies are planned. Canna-Pet has worked with Colorado State University Veterinary Teaching Hospital to determine what hemp products pet owners were purchasing for pet health, why they were making these purchases and the perceived value that owners placed on the products’ impact to their pets’ health. This was to serve as a basis for further research on using medical cannabis to treat pets. The same university also started studies in 2017 on the safety and efficacy of CBD in dogs with epilepsy and arthritis.

And now, the College of Veterinary Medicine at Auburn University in Alabama - one of the leading Veterinary Colleges in America - is starting a study that will specifically look at the impact of CBD on dogs, and depending on how the research progresses, ideally open up to exploring CBD on other animals as well.

While she can’t comment on whether or not studying the benefits of medical cannabis on pets could help advance the movement to legalize recreational marijuana for humans, she believes that having these clinical studies will help destigmatize the product, provide quality assurance guidelines and help clarify dosage for the animal medical community. She also recognizes that CBD treatment for humans is becoming a lot more popular, which is turning pet owners’ attention to its benefits. Canna-Pet’s CBD product has been used to help treat pain and anxiety on dogs, cats, horses, rabbits, macaws and tigers.

Despite the work that’s already been done, the research that is set to continue and the wealth of testimonials you can find from pet owners online who have used medical cannabis to successfully help their pets, Wormser points out that it will likely be at least a few years before we will see medical cannabis officially recognized as a treatment for pets. The study at Auburn University could take at least one to three years, and there will be a desire for more clinical studies before it’s officially approved as a medical treatment option.

In the meantime, it is clear pet owners are demanding different options outside of traditional medical options to help their furry family members in distress. Cannabis may just hold the answer. 🌿

For a Buck and Sometimes a Buzz, Brewers Are Putting Cannabis Into Cans

As laws relax on recreational use, marijuana derivatives — from THC to terpenes — are showing up in beers and nonalcoholic drinks.

Repost: Joshua M. Bernstein / The New York Times / November 15, 2018

For more than two decades, SweetWater Brewing Company's best-seller has been its floral 420 Extra Pale Ale, the numerals slyly nodding to the beer's April 20 birth date and the brewery's fondness for marijuana: 420 is drug-subculture slang for cannabis. "We've had to hide these things," said Freddy Bensch, who helped found the Atlanta brewery in 1997.

In June, SweetWater removed the cloak by releasing 420 Strain G13 I.P.A. It mimics the dank pungency of the G13 variety of marijuana — minus the high — by blending hops, hemp flavor and terpenes, organic compounds that are responsible for the distinctive fragrances of plant products from oranges to pine trees to, yes, cannabis.

"There's nothing better than watching a consumer pop a G13 cap, put it to his nose, take that first smell and see his eyes light up," Mr. Bensch said. Within two months, G13 became SweetWater's second-best-selling draft beer available year-round.

As state regulations on marijuana have relaxed and recreational use has become legal in several places (most recently Michigan and Canada), breweries have been looking for ways to use cannabis or its derivatives in beverages. The players range from conglomerates like the Corona importer Constellation Brands, which has invested \$4 billion in the Canadian marijuana producer Canopy Growth, to small craft brewers.

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A new I.P.A. from SweetWater Brewing Company evokes the G13 variety of marijuana (without the high) by blending hops, hemp flavor and terpenes.

Credit: Leah Overstreet for The New York Times





A tank at the SweetWater brewery in Atlanta is filled with the new G13 ale, waiting to be canned. Credit: Leah Overstreet for The New York Times

“It’s not that often that you see an area that’s so wide open,” said Gerry Khermouch, the editor of Beverage Business Insights.

This fast-moving quest for a potential windfall is also a confusing one, because laws and enforcement can conflict and change. Federal law forbids mixtures of alcohol and THC, marijuana’s psychoactive component; brewers are trying to get around that by putting THC into nonalcoholic drinks, and infusing alcoholic beers with other cannabis byproducts.

Breweries say they are willing to leap over legal hurdles, in part, because cannabis and its associated compounds can deliver novel aromas, flavors and experiences. This allows beers to differentiate themselves in a crowded market. “It’s like a whole new world of hops has opened up,” Mr. Bensch said.



Freddy Bensch, who helped found SweetWater. “We think the drinker and the cannabis consumer are the same person,” he said. Credit: Leah Overstreet for The New York Times

That world is rooted in a familiar relationship: Marijuana and hops — the flowers that impart bitterness, aroma and flavor to beer — both belong to the Cannabaceae plant family. Many varieties of marijuana and hops share aromatic signatures, from citrusy to resinous.

“Craft brewing and marijuana have always been very closely connected,” said Tony Magee, the founder and chairman of Lagunitas Brewing Company, in Petaluma, Calif. “There’s something about craft brewing that’s essentially part of the counterculture.”

Lagunitas, founded in 1993, has long championed cannabis. It calls its experimental beers the One Hitter Series, referring to a small marijuana pipe. Its copper ale was renamed Censored in 2002 after the federal government banned a proposed label for Kronik, a variation on a cannabis nickname.

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Since California legalized recreational use of marijuana last January, Lagunitas (now owned by Heineken) has entered the cannabis marketplace with Hi-Fi Hops, a collaboration between the brewery and cannabis-extract manufacturer CannaCraft. Released in July, the drink is a hopped sparkling water infused with THC and packaged in 12-ounce bottles.

Hi-Fi Hops comes in several different strengths and is sold only in marijuana dispensaries, where cannabis drinks accounted for \$58 million in nationwide sales last year, according to the firms Arcview Market Research and BDS Analytics.

That may seem minuscule compared with overall American beer sales — \$111 billion last year, according to the Brewers Association — but Mr. Magee is playing the long game.

“There’s a generational change happening that’s taking the handcuffs off marijuana,” said Mr. Magee, who envisions a future in which beer and marijuana are sold on a level playing field. “I think THC beverages will be competitors for beer.”

That may require transforming Americans’ attitudes toward marijuana. “Right now, there isn’t a socially acceptable way to consume cannabis with friends and family,” said Keith Villa, who retired this year from MillerCoors, where, as head brewmaster, he created the influential Blue Moon Belgian White.

He hopes to change that: In March, Mr. Villa announced the creation of Ceria Beverages, a company in Arvada, Colo., that will make nonalcoholic craft beers infused with small doses of THC. The first, a Belgian-style white ale called Grainwave, will go on sale in Colorado dispensaries in mid-December, with five milligrams of THC (a standard amount for edibles like gummies) per 10-ounce bottle.

“People should be able to drink our beers and experience the onset in about eight or nine minutes, which is similar to alcohol,” Mr. Villa said. The goal is enjoyment, not inebriation. “You can easily have a couple of bottles while watching the Yankees game.”

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Hi-Fi Hops, a sparkling water made with hops and THC, at a dispensary in Hopland, Calif. Credit: Ramin Rahimian for The New York Times



Beer makers have also been wooed by cannabidiol, or CBD, the nonintoxicating cannabis byproduct that has become a darling of the wellness industry, billed as a remedy for pain, anxiety, acne and depression.

An early and prominent proponent of CBD-infused beer is Coalition Brewing, of Portland, Ore. In 2016, the brewery released the bitter, citrusy Two Flowers I.P.A., containing hemp juice and four milligrams of CBD per 12-ounce serving. (It removed the hemp juice after federal rules changed.)

The company says it was eager to explore the biological similarities between hops and cannabis, and highlight their crossover aromatics and flavors. “We did not want to make a gimmick beer,” said Phil Boyle, the general manager and an owner. “We wanted to make a beer that could stand by itself, irrespective if it had CBD or not.”

Simply adding CBD to beer may not guarantee sales. “If I’m a user of CBD, I’m probably not looking for it in an alcoholic beverage,” said Chris Furnari, the editor of *Brewbound*, which covers the beer industry. “It’s similar to looking for protein in your vodka or beer.”

Coalition has altered its formulations several times to comply with changing laws. In March, the federal government ordered Long Trail Brewing Co., in Vermont, to stop sales of a CBD-infused beer called Medicator because nonstandard beer ingredients such as hemp require special approval. A similar fate befell Black Hammer Brewing in San Francisco; in May, it ceased production of its CBD beers.

The federal government also forbids brewers to add THC to products produced at their breweries. So for its Hi-Fi Hops, Lagunitas ships its hop-infused water to another company, AbsoluteXtracts (a division of CannaCraft), which doses it with THC and packages it under the Lagunitas name.

There’s always a fear that brewers will undercut their own products, but Mr. Bensch doesn’t believe that cannabis will cannibalize beer sales. “We think the drinker and the cannabis consumer are the same person,” Mr. Bensch said. “There’s no reason they can’t smoke a joint and drink a beer at the same time.” 🌿



Ian Walsky, an owner and the head brewer at Coalition Brewing, testing a beer at the brewery in Portland, Ore. Credit: Leah Nash for The New York Times



Deagreez / iStock / Getty Images Plus

How Cannabis Affects Men & Women Differently

repost: mary schumacher / the french toast / november 9, 2018

For decades, the cannabis movement has been predominantly a boy's club. Women are rising up and earning leadership positions all over the industry now, but where did that original disconnect come from? Could it be the way that marijuana affects men and women in different ways?

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From voting on measures to cultivating the plant, women are crucial to cannabis and are now leading the way into its next evolution.

While balance is being restored, however, having the knowledge of how cannabis affects people when sex is the main equation is important, not only for valuable information, but for direction in the ever more detailed world of weed.

The main way that cannabis acts differently in women as opposed to men is its interaction with the female production of estrogen.

Estrogen is like a magnifying glass for THC and so it may take less cannabis to elevate a woman, especially in the days prior to her ovulation. This is a very good thing for gals who toke, as cannabis is one of the best remedies for period pains, mood swings and other discomforts.

On the other hand, in the same study conducted by Washington State University it was found that the ladies build up tolerance to marijuana faster than their male counterparts, meaning that even with estrogen boosts, they may need an extra pull off the joint for the desired outcome.

Another finding in popular studies is that cannabis, a known aphrodisiac, is more effective in women than men, at least in higher THC strains.

Men are more susceptible to getting the bedroom jitters when super high and performance anxiety can beyond kill the mood.

While some studies show that women should choose strains with lower THC counts as well, others show that pretty much any amount of THC is a sexual stimulant for women.

In another study, the researchers found that marijuana affected visuospatial memory more in women than in men, but non-cannabis related studies also suggest that men have an advantage in this type of memory that revolves around object perception and spatial relations.

The study also pointed out that women have been grossly underrepresented in pot studies. The overarching truth of the matter is that listening to your mind and body and imbibing to your own satisfaction or limits is a very personal thing, no matter man or woman. Just do you and limit the amount of influence you take on from how much your friends or your partner are using.

Cannabis is fun, but it's medicine, too, and knowing and respecting your own limits is part of the experience. 🌿

Studies:

- [Estrogen increases cannabis sensitivity](#)
- [Evidence for a Sex-Specific Residual Effect of Cannabis on Visuospatial Memory](#)

Cannabis and the Brain: Recent Studies Shed New Light

Repost: Catharine Paddock PhD / Medical News Today / November 13, 2018

Recent research sheds new light on the effects of cannabis on the brain. It reveals a complex pattern of potential harms and benefits that varies with age and disease.

The findings came from a number of studies that featured at the 2018 annual meeting of the Society for Neuroscience, held in San Diego, CA.

They reveal, for instance, that exposure to marijuana before birth and during teen years can affect the developing brain in several ways. Some of these ways disrupt communication between different parts of the brain, while others interfere with learning and memory and disrupt levels of chemical messengers and metabolic compounds. However, exposure to a compound present in marijuana can improve memory in Alzheimer's disease and even reduce some of its symptoms.

Marijuana Use on the Rise

Among the hundreds of compounds in the marijuana, or cannabis, plant are more than 100 called cannabinoids that can alter the release of messenger chemicals in the brain and nervous system.

In the United States, cannabis is the "most popular illicit drug." A nationwide survey revealed that 22.2 million people aged 12 and older said that they had used cannabis in the past month. Also, the percentage in this age group who reported having used the substance during the past month has risen steadily from 6.2 to 8.3 percent in 2002–2015.

More and more people are now using cannabis not only as a recreational drug but also medicinally, such as to help alleviate the pain and symptoms of multiple sclerosis, epilepsy, and other long-term conditions.

The increase in cannabis use — together with the relaxation of legislation by many states — is not, however, matched by an increase in conclusive evidence on its long-term benefits and harms.

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Marijuana Use on the Rise

The six studies unveiled at the recent meeting shed some much-needed new light on the long-term effects of cannabis use over the lifespan. Specifically, they found that:

- Exposing unborn rats to delta-9-tetrahydrocannabinol (THC), which is a psychoactive compound of cannabis, reduced their resilience to stress in later life.
- Such exposure also led to faulty development of brain circuits for memory and learning, which the scientists observed when the animals reached adolescence.
- Adolescent rats that used cannabinoids showed enhanced activity in brain circuits that regulate the formation of habits.
- Adolescent rats that used cannabinoids showed enhanced activity in brain circuits that regulate the formation of habits.
- Cannabinoid use by adolescent rats also showed physical alterations in the development of brain regions involved in self-control, making decisions, and planning.
- In adult mice, the long-term use of cannabinoids led to changes in connectivity and metabolism in regions of the brain involved in memory and learning.
- Mice with Alzheimer's disease showed memory improvements and lost fewer brain cells when scientists treated them with THC. This could lead to a therapy for the human disease.

'Need for better understanding'

From these and other studies, the evidence suggests that cannabis can do long-term harm to the unborn; and yet, among pregnant women, it is the most popular illegal drug.

Experimenting with marijuana often starts in adolescence, at a time when the developing brain is still vulnerable.

The new studies confirm that cannabis use may have some medical benefits in specific situations, noted press conference president Dr. Michael Taffe, who researches substance abuse therapy at the Scripps Research Institute in La Jolla, CA.

However, he cautioned that the studies also underscore the vital need for "a better understanding of the negative aspects as well, particularly for pregnant women, teens, and chronic users."

"Today's findings lend new understanding of the complex effects that cannabis has on the brain."

- Dr. Michael Taffe

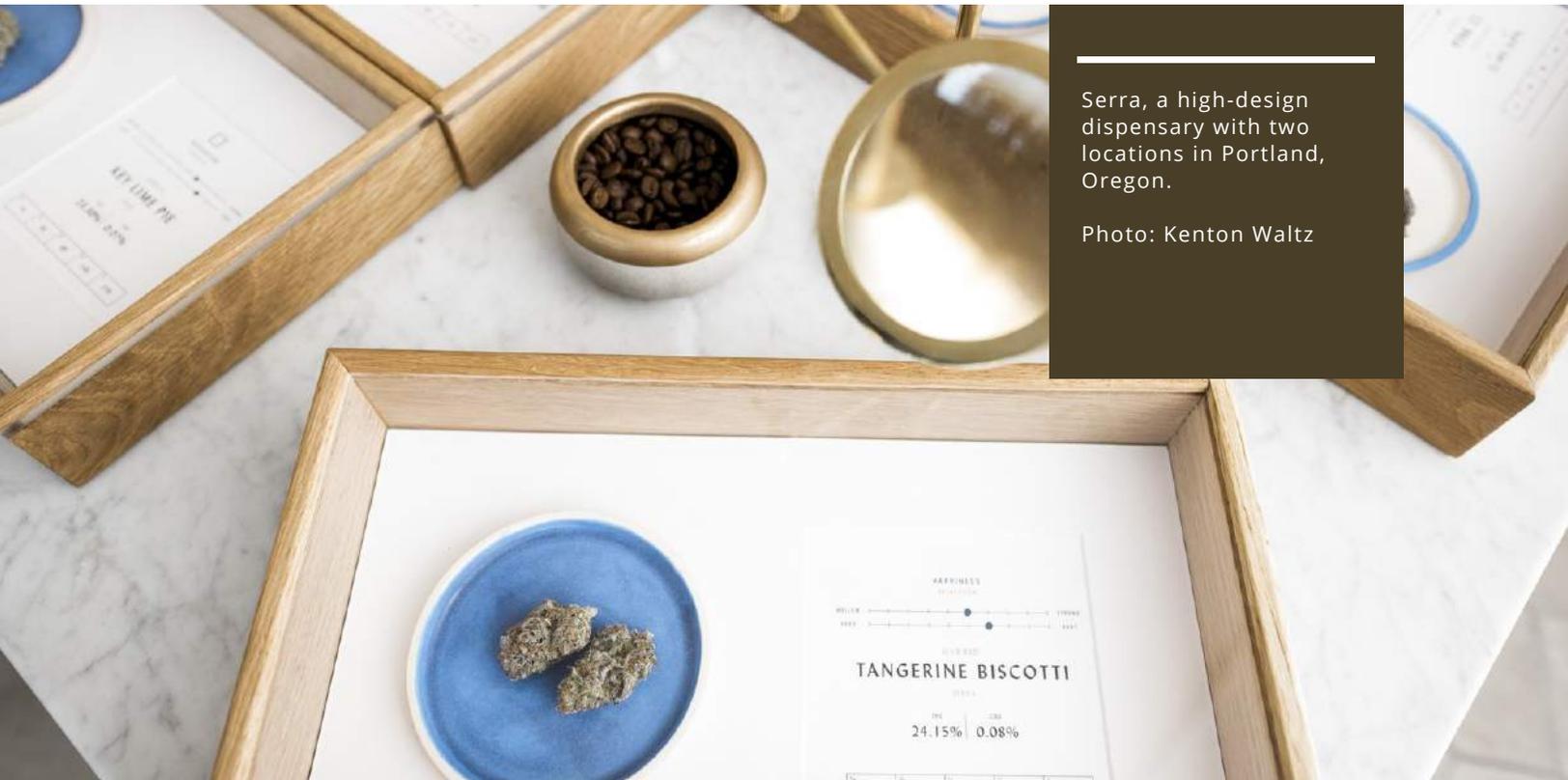


ARCHITECTURE + DESIGN

Designing for the New Culture of Cannabis

Say goodbye to drab, institutional interiors and trippy accoutrements—top-tier designers are making the face of marijuana more beautiful, smart, and inviting

Repost: Meaghan O'Neill / November 6, 2018



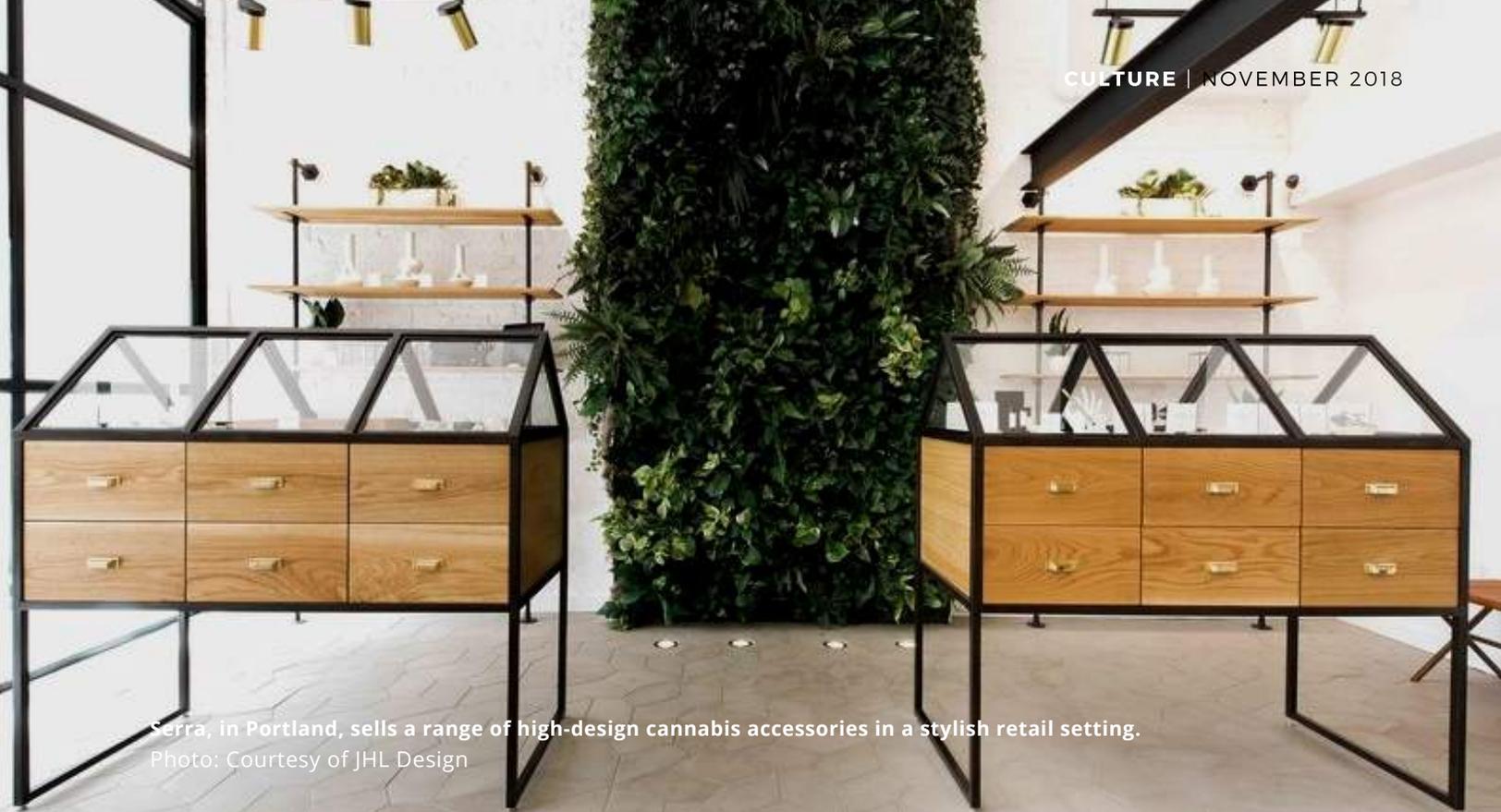
Serra, a high-design dispensary with two locations in Portland, Oregon.

Photo: Kenton Waltz

Since California voters passed a proposition to allow the use of medical marijuana in 1996, 30 more states and Washington, D.C., have followed suit. Of those, nine have also legalized it for recreational use. In October of this year, Canada became the second country to legalize recreational cannabis nationwide. (Uruguay did so in 2013.) And with its emergence from the shadows of the law, marijuana is getting a total makeover.

Take, for example, Lowell Herb Co., a California-based farm, which brings a bucolic farm-to-table concept to its brand. Their Instagram-worthy, organic products are wrapped in rustic-chic packaging, while their one-ounce cannabis bouquet is a charming mix of eucalyptus, greens, and still-on-the-stem pot flowers. Bloom Farms' describes their Rose Gold Highlighter Plus vape pen as “a luxury fashion accessory.”

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Serra, in Portland, sells a range of high-design cannabis accessories in a stylish retail setting.

Photo: Courtesy of JHL Design

In addition to its discreet design and pretty metallic finish, it's engineered with a ceramic filter and BPA-free cartridge just right for the health-conscious hipster. Beboe, which sells luxury vaporizer pens and pastilles candies, has been described by *The New York Times* as the “Hermès of Marijuana.”

Accessories, too, are getting an overhaul. Serra—a high-end dispensary with two locations in Portland, Oregon, where both medical and recreational marijuana sales are legal—sells beautiful bongs, artisanal pipes, and even utilitarian avant-garde art that any weed-loving design enthusiast would be proud to display.

Here, shoppers can also pick up a contemporary necklace with a geometric charm that doubles as a tool for tamping joints. Pax vapes, which have been called the “iPod of vaporizers,” are sleek, efficient tools with rechargeable batteries and a companion app that allows users to control the mechanism for precise temperature and even lock it against unwanted use. (Handy if you have, say, teenagers in your household.)

But no area of cannabis culture has seen (or needed) a bigger change than the interiors of dispensaries, which have traditionally been more like high-security vaults than chic retail lounges.

At Serra's two locations, clean and minimalist interiors are flooded with natural light from windows that look out to (and in from) the surrounding neighborhoods. The look is elegant, but also welcoming.

Diego Pellicer, which has locations in Seattle and Denver, went for a high-rolling, cigar-shop-like effect, designed by internationally acclaimed architect Michael Rotondi and former Apple creative director Jill Savini.

Meanwhile, one of the industry's biggest brands, MedMen, has opened 14 stores throughout the U.S., many in famous shopping districts including New York City's Fifth Avenue and Las Vegas, where a second shop opened in October (a third is planned for 2019).

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One design firm, High Road Studio, specializes exclusively in the cannabis industry. Founder Megan Stone, who worked in dispensaries during design school, recognized the need for improved spaces. She wondered why microbreweries, wine shops, and even frozen yogurt cafés were getting overhauled, while dispensaries still felt “seedy and gross.” Since 2013, she’s designed and done branding work for 50 dispensaries in 15 states and Canada.

Stone, who is based in Arizona, designs spaces that are inviting, welcoming, and secure, but not overly exclusive. At Maitri, in Uniontown, Pennsylvania, for example, she created a secure glass vestibule through which customers pass into a comfortable lobby decorated in jewel-tone colors. Consultation rooms, where patients can discuss their personal needs, offer discretion, but are enclosed with glass.

Since orders must be filled in the back of the house, a wall of false drawers behind the checkout counter reveals a hidden pass-through, delighting customers when their orders are ready. In one corner, an ATM—something of a necessity, as most dispensaries only trade in cash—is encased by what Stone describes as a “tunnel of ribbon.”



The reception desk at Maitri Medicinals in Pennsylvania, another High Road Studio project. Photo: Richard Cadan

Overall, the space creates a memorable experience for the customer, explains Stone, but is also functional, secure, and efficient.

In all of her projects, Stone aims to pay homage to the culture and history of the cannabis industry, as well as its hard-fought battle to become mainstream. “There’s a different angle people need to see this industry through,” she says. “Every space I design is a chance to change people’s minds about it.” 

High Road Studio designed Gnome Grown’s bright and colorful showroom in Oregon City, Oregon. Photo: Richard Cadan



These Sparkling CBD Drinks Have Replaced My La Croix Habit For Good

REPOST: ANNIE DALY / HEALTHYISH - BONAPPETIT / NOVEMBER 6, 2018

Recess pairs CBD and adaptogens for a one-two punch of millennial chilled-out bliss.

I consider myself a fairly trend-adjacent person, enough in the loop to casually know what everyone's obsessing about, but not so in the loop that I am actually one of the obsessors. Waiting until the hype has waned is my move, which explains why I am currently cruising through *Mad Men* on Netflix.

But with trendy CBD—the non-psychoactive cannabis compound found in both cannabis and hemp plants that the *New York Times* recently called “the new avocado toast”—I'm more than adjacent; I'm a straight-up evangelist. And my latest CBD discovery is Recess.

Launched in October, Recess is a La Croix-esque sparkling-water drink infused with CBD and adaptogens (herbs that help your body adapt to stress).

While there are other CBD-infused drinks on the market, like Dirty Lemon's +cbd, sprig, and Kickback CBD Cold Brew, Recess is the only one made with both adaptogens and the millennial Kool-Aid that is sparkling water.

When I first heard about this drink, it sounded a little too Peak 2018 for my liking: La Croix vibes, CBD, and adaptogens?! Even for a CBD obsessive, it was a bit much. But then I tried a can, and I was hooked..

A can of Recess—which contains 10 mg of cannabidiol from full-spectrum hemp extract—simultaneously relaxes my body and gives me this low-key productivity buzz.

I'm able to peacefully get my work done without checking Instagram every two seconds or taking a Very Important quiz to find out what my Zodiac sign reveals about what type of sandwich I am. And Recess's founder, Benjamin Witte, says that's no accident.

For starters, using full-spectrum hemp extract as opposed to CBD isolate (the other option) means that the extract also has other cannabinoids found in the hemp plant, which some research has shown may help create a more potent product.

He also sources the CBD from a high-quality farm in Colorado, where the hemp is grown under strict guidelines using only 100% organic farming practices. I love their slogan, too—“not tired, not wired”—because that's legit how I feel when I drink a can.

But, for me, Recess' biggest draw is that, unlike other CBD products, there isn't any sort of ick factor involved to get the benefits.

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When I take CBD oil pills, I end up burping up little tastes of weed throughout the day. And when I get a CBD latte from the place on my corner, the hemp oil also comes on a little too strong and then chills on my tongue, like when someone stares at you for just one second too long.

With Recess, you don't have to put anything under your tongue, you don't have to worry about "the linger," and let's not forget, it's water, so you're also doing double duty by hydrating. It comes in three flavors—blackberry chai, peach ginger, and pomegranate citrus—along with concentrated juice and organic ginger to help mask the CBD taste.

My favorite flavor is blackberry chai, because it reminds me of the chai that my fiancé, who grew up in New Delhi, introduced me to on our first trip there.

Because they're so drinkable, I end up casually sipping on a can all day long, which sets me up to chill in my concentration cocoon throughout the day. And then, before I know it, I have magically conquered my to-do list, and it's already time to chill in my other go-to cocoon: the pile of blankets on my couch. 🌿



A Winning Formula

WHO WE ARE

FCM Global is a Colombian-based producer/supplier of medical grade cannabis extracts, oils, isolates, and microemulsions to pharmaceutical, nutritional, and cosmetic companies, research organizations, product distributors, and wholesalers in legal markets worldwide.

We are proud to serve these critical sectors and to help support our clients as they create new cannabis-based medicines and wellness products that meet the highest international standards for quality at accessible prices.



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