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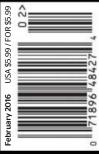
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HIGHTIMES FEBRUARY



"I see cannabis as the last bastion of the American farmer. We control our crops; we work hard, bring them to harvest and decide who we want to sell them to."

–Big Ups to Calil, page 74

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The High Times Cultivation Department examines the latest in techniques and technology for growing marijuana without soil. Learn the basics as well as the most advanced hydroponic info for achieving massive harvests and accelerated growth. Special bonus: "Nine Hot New Hydro Products."

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An expert in the art of hash-making reveals his secrets for producing beautiful full-melt hashish. Learn how to create one of the purest, tastiest and most potent cannabis concentrates on the planet without the use of solvents or ice water.

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The road wasn't easy, but neither bugs nor drought nor fire could stop the growers of California's north country from reaping a bountiful harvest. By Dan Skye

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Despite complex legal hurdles, Native Americans have begun laying the foundation for a new tribal cannabis industry-bringing a promise of economic development to reservations hit hard by unemployment and poverty. By Nic Easley & Adam Koh

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The Cannabis Manifesto is a foundational document for the brave new world of marijuana-law reform. This excerpt examines the history of the Drug War and the burgeoning legalization movement. By Steve DeAngelo

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The legendary comedian, actor and activist gets real about pot and sex, living "green and sober," and hitting the road again with her raucously funny PsyCHO Tour. By Mary Jane Gibson

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Glass Artists of the Month

"I've always possessed an affinity for anything left of center," admits Sarita, "especially those experiences that make life colorful."

So it's no surprise that she was drawn to a career in glassblowing. Her baptism of fire, so to speak, took place in 2010, when she embraced the industry as a means to support herself and her young son, while completing her degrees in the arts.

She says that it wasn't until she moved to southern Oregon in 2013, that she realized she was participating in a living, art history movement. Under the mentorship of the seasoned glass artist Turtle, she elevated her work from simple production pipes to more technically involved artistic pieces (Instagram: @saritaglass!).

"It's been so inspiring to watch a medium that the mainstream has historically considered taboo begin to demand validation in the art world," she says. "I now have an insatiable desire to learn as much as I can. I'm definitely hooked!"

Years of travel and study in the arts provide



plenty of inspiration for Sarita to draw on. She explains that her love for the bohemian aesthetic and lifestyle—and folk art especially—connects her to a culture and its people.

"I'm so thankful to all of the incredible artists who have come before me and assisted in making this path a reality for me," she says. "I wouldn't be where I am today without their vision and support." *Check out Sarita's work online!*

POT POLL



 Who cares? I need to get high!
 61%

 13%
 Yeah, but just one toke

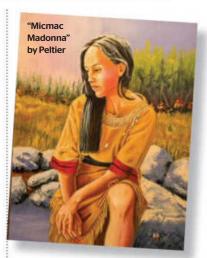
 26%
 No. I have standards

Those who live in states where pot is legal probably will never have to make this choice. But where pot is scarce, it's not unusual to go a few days without toking up—sometimes even longer. Here's the scenario: You're out of pot and are dying to get high. Someone you really detest offers you a toke on a joint. Do you accept? Of nearly 5,000 respondents, 61 percent said yes. But 26 percent said no way. Comments were outstanding though, especially those praising pot's capacity to promote good will: "Sounds like an opportunity to make a friend of an enemy to me!"

Cast your vote in our latest poll online!

Star Buds

Ever notice the proliferation of celebrity strain names? It seems every dispensary now carries buds that have been named for famous people. We take a close look at the nugs named for stars in this online gallery-every bud from Chongstar to Bruce Jenner Crumble!



The Art of Peltier

Leonard Peltier was wrongly convicted and imprisoned in

1977 for the murder of two FBI agents following a shootout



on the Pine Ridge Indian reservation. His case is one of the worst miscarriages in US history wherein evidence was fabricated and witnesses were coerced to give false testimony. Behind bars, Peltier has become a fine artist. Check out his artwork online and learn more about his case. Then demand that President Obama pardon him!

The Ganja Gene

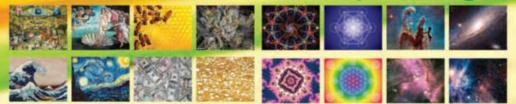
Some stoners can shop, go to the bank and even go to class while high, while others can't even make it out the door. Both types of people may have similar levels of intelligence when straight, so why does pot affect them differently? Scientists have discovered a specific gene that appears to control how together your shit is or isn't when you're high.

The Great Outdoors

Around the country, the outdoor crops have been harvested, trimmed and cured. Now the buds are being enjoyed by the ever-expanding community of cannabis users. Editor-in-chief Dan Skye got a look at massive harvests in a number of locations. Check out this online gallery of monster plants and luscious buds on the vine!

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The Green Future of Hydro

Cannabis cultivation has come under a decent amount of heat lately for not being very "green." A nationwide energy crisis, water shortages in California, ocean levels that are undeniably rising because of carbon emissions— all of this bad news is raining down on the cannabis parade in a perfect storm of environmental catastrophe.

Policymakers realize that, given the fast pace and high overhead of cannabis cultivation, too many growers won't be taking the necessary steps to protect the environment. As with other industries, it will be left to government agencies to come down hard on irresponsible cultivators and force them to respect the environment by implementing stringent regulations.

But what if we beat them to it? What if we, the community of cannabis cultivators, make our practices as green as possible before lawmakers have a chance to over-tax and over-regulate the industry? By switching to greener practices, and telling the world about it, you can help change weed's image and make it the most environmentally friendly crop Mother Nature has to offer.

While hemp's reputation for benefiting the environment is almost impossible to tarnish, cannabis grown for its flower still has a long way to go before it becomes environmentally friendly. Moving into greenhouses and away from artificial lights will help cut the electric bill, but water is still a massive concern. It may seem counterintuitive, but hydroponics could be the answer. By carefully nourishing your plants with the exact amount of nutrients they need and reusing the same water, hydroponics can use up to 90 percent *less* water than growing in soil. If you're in the process of starting your own grow, be sure to pay some attention to sustainability before investing in high-intensity discharge lamps and drain-to-waste hydro. You won't only be aiding the environment; you'll be putting in some much-needed work to help get rid of cannabis's reputation as a resource-hungry crop.

> Sirius J Science Editor



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CONTRIBUTORS Paul Armentano, Carrie Doorhy, Mel Frank, Andre Grossmann, Brian Jahn, K of Trichome Tech, Lochfoot, Kevin Mahmalji, Mark Miller, Samantha Nicholas, Harry Resin, Michael Simmons, Allen St. Pierre

RESEARCH ADVISOR Dr. Mitch Earleywine CHIEF OPERATING OFFICER Michael Safir

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12 Letters

Love Thyself

Re "The Self-Loathing Stoner" (Dec. '15): All of those nagging complaints and self-criticisms happen to the best of us. People doubt themselves, and stoners are only human.

I take comfort in the fact that any negativity that might be taken from Rick Cusick's essay is negated, in the very same issue, by the sensible, forward-thinking presidential candidates ("Pot & the New Prez") and, even more so, by the wise words of Penny Lane and Darcy in the Letters section. "I try to live a good life," I feel, sums up the universal stoner philosophy. How could that be taken as a bad thing?

I won't preach to the converted about the benefits of cannabis, but I will ask stoners not to be so hard on themselves. Don't let the bad guys get you down, and take care of yourself. Spread love, not fear and hatred. Truth, not deception.

> Austin D. New South Wales, Australia

Can't Get No Satisfaction

I went to the Cannabis Cup for the first time. I've been looking forward to going since I was a teenager. It was a great time, but I bought six Purple Kush seeds while I was there. Two of them were males and the rest are not Purple Kush at all. They look like a Kush strain, but not Purple. I feel like not coming back. *Thomas R.*

Contact the seed seller if you're dissatisfied; more often than not, they'll try to resolve any problems. But unless you purchased feminized seeds, don't blame the seller for the two dudes: Mother Nature is the culprit.

High On Country

I'm an avid reader of High Times. I love to read about the music and talent from all genres. However, I've seen hardly any articles on country-music singers or interviews with current country artists besides the legendary Willie Nelson. I know Brandy Clark sings "Get High"; Ashley Monroe sings "Weed Instead of Roses"; and Eric Church sings "Smoke a Little Smoke." I was wondering if you could do a country-music issue featuring interviews with some current big names like Kasey Musgraves. All in all, I love your magazine-it's a one of a kind. God bless the country and High Times forever!

Matthew Webb

SUPER HOT BREEDING TIP HIGH BREEDING TIP

I wanted to say, as a minority in South LA, that weed brings us together as a community.

Thanks for the suggestion! We're open to articles about artists from every genre who support cannabis.

The Perfect Temp

Concerning "Understanding Leaf-Surface Temperature" (July '15), over 25 years ago Sensi Seeds did a scientific study and found that at 70°F, the sugar level of the plant was highest, meaning it will grow fastest at that temperature.

> John Norris Maguire III South Carolina

Stoner Semantics

There's a definable difference between a pothead and a pot *smoker*. I've smoked marijuana for quite a while, and in certain circles I've had to hide it for years because I refuse to be labeled a "pothead" or "stoner."

To make it simple, I'll break all marijuana users into two main groups: pot smokers and stoners. I'll spend more time highlighting the former, because the latter gets all the attention.

Pot smokers are the people who get things done. Marijuana didn't become legal in Colorado under the guidance of stoners. Organizing, fundraising and meeting deadlines are things that potheads don't do. The negative stereotypes Send your letters to Feedback c/o High Times, 250 West 57th St., Suite 920, New York, NY 10107 Email: hteditor@ hightimes.com

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and the dumbass things that stoners do make pot smokers want to run

and hide.

Don't blame the weed because you choose to be lazy! But more importantly, don't judge people who enjoy marijuana.

Rainmaker

Dream Big!

I live in Brazil, and cannabis isn't legal here yet. I'm 25, and for many of those years, I was aimless, without something of worth to follow, until I had contact with cannabis. It helps in many ways, and it could be the great salvation for the planet. It brings peace. I now have the dream of opening my own coffeeshop and headshop. I want to work with cannabis to create peace and tranquility and treat disease. I intend to go to college to specialize in biology and genetics and cannabinoids. I am thinking also about creating a

new strain that might have a feel similar to that of LSD, but focused only on the psychedelia and moments of pleasure. *Hertz Alexandre*

Brazil

Keep us informed about your progress—especially with that LSD strain!

Cannabis for the Community

I wanted to say, as a minority in South LA, that weed brings us together as a community. If only people would see it as a stress releaser and not a drug like a high-powered pill. We need more understanding about the flower—then we wouldn't be harassed by so-called "law enforcement." I've come across a few that took my meds and insulted me. Hopefully, we can make LA a better place for stoners. Thanks for hearing my rant! *Jimmy Q.*

Check out the excerpt from Steve DeAngelo's *The Cannabis Manifesto* on page 99, because he wholeheartedly agrees with you. Steve writes: "Cannabis doesn't harm communities, it strengthens them."

Correction: In "Michigan on the Move" (Dec. '15), we stated that the MI Legalize initiative allows up to 2.5 ounces for adult possession. In fact, the initiative proposes no possession limits.





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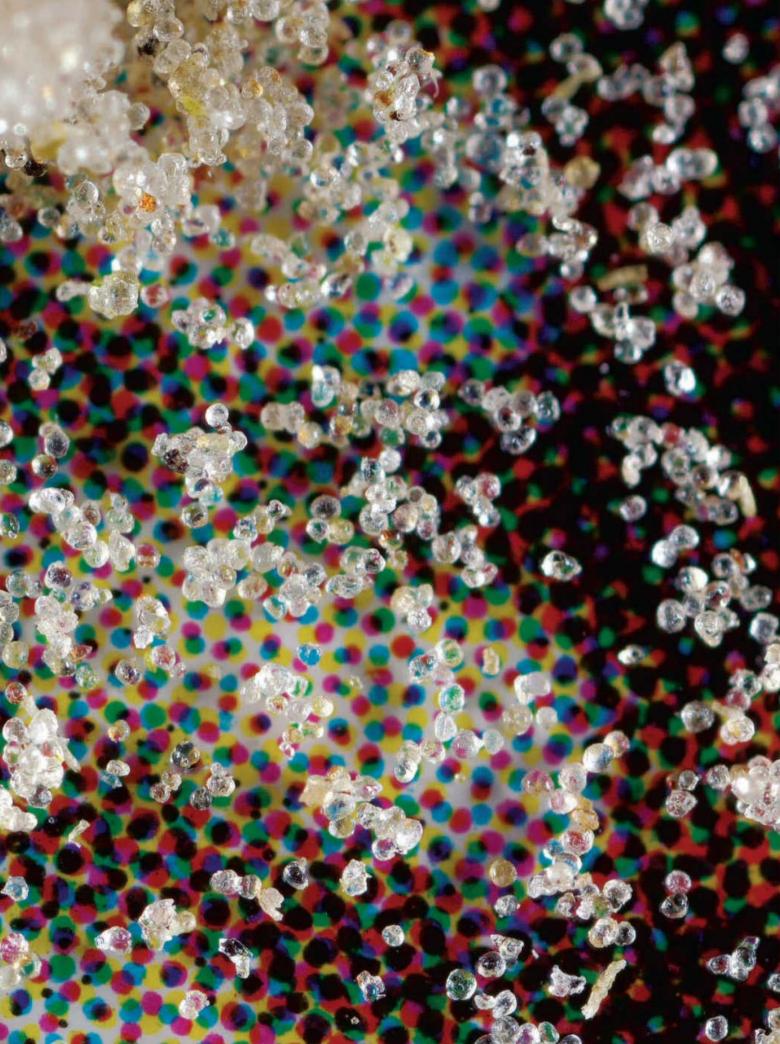
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High Times February 2016

Contact High

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BUBBLEMAN'S DRY SIFT Hashish extraction artists strive to separate the glandular trichomes containing the many desired essential oils such as cannabinoids, terpenes, and flavinoids. Here, the individual gland heads are magnified in all their glory, ready to be consumed and enjoyed as the true "cream of the crop." Get the scoop on how to make dry sift on page 63. *Photo by Bubbleman*



Contact High

16

BUD IN THE HAND "A bird in the hand is worth two in the bush." It means focus on a sure thing, rather than an uncertain opportunity. But what about a bud in the hand? Is it worth two in the bush? The bud in this dude's hand is worth the whole bush! That's what kind of harvest it was at Marisol Gardens in Pueblo, CO. Read about the buds of autumn in "Big Ups To Cali" on page 74. Photo by Dan Skye

High Times February 2016



Contact High

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High Times February 2016

HIGH TECH HYDRO Growing plants hydroponically delivers nutrients and oxygen to roots in a highly soluble form that's impossible in soil. The results are bigger yields of massive buds like these shown here. Dial in your hydro garden with our 2016 Hydro Special on page 47. Photo courtesy of Greenhouse Seeds





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Cannabusiness = Organized Crime?

The RICO statute, used to prosecute criminal enterprises like the Mafia, is now being wielded against the legal cannabis industry. *By David C. Holland*

The battle to curb the burgeoning field of legal cannabis cultivation has been revealed in the Colorado case known as *Safe Streets Alliance v. Alternative Holistic Healing, LLC.*

Safe Streets, an anti-crime group whose members own property that abuts an Alternative Holistic grow facility, has brought civil-racketeering claims against the dispensary under a federal statute known as RICO in an attempt to shut down a state-licensed cannabusiness, allegedly because the building in question damages the value of the Safe Streets members' property.

Safe Streets asserts that while Alternative Holistic Healing, Colorado Governor John Hickenlooper and a host of other state officials may be acting in accordance with Amendment 64, the law that allows the manufacture and sale of marijuana in Colorado, the cannabis industry itself remains illegal. Why? Because marijuana is still a Schedule I substance under the federal Controlled Substances Act and thus cannot be legally grown or sold.

The Racketeer Influenced and Corrupt Organizations Act (RICO) was created decades ago as a means of targeting organized-crime groups like the Mafia, preventing these large-scale criminal enterprises from investing profits derived from their illegal activities into legitimate businesses that would then compete in the marketplace and affect interstate commerce. A plaintiff who successfully prosecutes a civil claim under RICO can seek triple damages from the defendant plus attorneys' fees.

However, a successful civil RICO claim requires that two or more persons be shown to have committed illegal acts to further the criminal enterprise. Safe Streets alleges that Alternative Holistic Healing and state officials have conspired and confederated, along with a slew of other individual and corporate defendants, to grow and sell cannabis in Colorado under Amendment 64. But Safe Streets must also prove that people or organizations with no legal or readily identifiable relationship to each other have actually worked together to further the ends of this criminal enterprise, thereby causing damage to the value of its members' property.

Acts specifically identified in the RICO statute include violent state felonies (punishable by more than a year in jail) such as murder, robbery, extortion and loan sharking, as well as mail and wire fraud. Violations of the Controlled Substances Act qualify, too. Safe Streets claims that the damage to the property interests of its members by Alternative Holistic Healing and its federally illegal marijuana business entitles them to relief under RICO's civil-remedy provision.

But this is where things get tricky for the plaintiffs. Under RICO, the distinction between a group of criminals and a criminal organization or enterprise is that, unlike a bunch of thugs carrying out illegal schemes and sharing the loot, the criminal enterprise must actually become something larger and more selfsustaining than its members and their individual acts. In other words, it must be capable of existing on its own after you subtract particular members and their deeds.

A simple example is the creation of a real-estate development. Not uncommonly, a developer might bribe public officials to secure zoning approvals and

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work permits. Other individuals might enter kickback deals to lower construction costs, while falsely taking tax write-offs once the project is completed all of which is illegal. The completed development can then compete in the real-estate market and affect interstate commerce even in the absence of the people that created it, because the development is capable of generating income through sales, which could continue indefinitely.

Plaintiffs must also show that the harm to their property or business interest is concretely identifiable in terms of a dollar amount, and that the injury was directly caused by the criminal enterprise and its impact upon interstate commerce. In terms of our example, an ugly real-estate development that makes the land less aesthetically pleasing, thereby impacting future sales, is *not* a concrete damage. But if the criminal enterprise's development causes a plaintiff's property value to measurably drop, then it qualifies under RICO.

Given these requirements, the Safe Streets suit will almost certainly not succeed, especially since Alternative Holistic Healing is acting under a license issued by the state of Colorado. Unlike the conduct proscribed in the RICO statute,

The US Justice Department has made it clear that any dispensary or grow op acting in accordance with state law should not be prosecuted for its activity.

operating with a license issued by a proper state authority is not a recognizable violation of federal law. Also, at the time the lawsuit was filed, Amendment 64 was barely 18 months old. This poses an additional problem, because there is a continuity requirement for RICO, and Alternative Holistic Healing's actions do not meet the statute's two-year threshold.

As for the issue of whether Alternative Holistic Healing poses an ongoing threat to the business and property interests of Safe Streets' members, the US Justice Department has made it clear that any dispensary or grow op acting in accordance with state law should not be prosecuted for its activity.

It's doubtful that a court would find that Alternative Holistic Healing, Governor Hickenlooper and other state officials are working together in furtherance of a criminal enterprise under RICO, if for no other reason than that the dispensary cannot exist independently of its members. If Alternative Holistic Healing were to shut down, there would be no continuing impact on interstate commerce, and thus no viable criminal enterprise as defined by RICO.

Also, the alleged loss of property value suffered by the Safe Street members is speculative at best. Certainly, a decrease in value can occur when people decline to purchase a property that abuts a business like a liquor store, a porn theater, a restaurant—or a dispensary. But the plaintiff must show that the damage was caused by the criminal nature of Alternative Holistic Healing's activity, not just the existence of a busy commercial business on that same lot.

In short, while Safe Streets is making bold use of a powerful federal statute in an attempt to set a precedent for outlawing the legal marijuana industry in Colorado, don't expect this ridiculous RICO claim to succeed. \checkmark

David C. Holland is special counsel to High Times magazine.

HIGH FIVE

Celebrity Smackdown

Obviously, being a media star is no guarantee of intelligence. By Mark Miller



Sharon Osbourne

In July, Osbourne opined that pot legalization is "going to end in tears' because of the increase in car accidents-despite the fact that highway fatalities in Colorado were at a historic low in 2014. Worse, Sharon gleefully predicted that "new laws" in the US would overturn state legalization. It's hard to fathom that this is the wife of Black Sabbath's Ozzy who dave us the stoner rock classic "Sweet Leaf."



Gene Simmons

Simmons's visceral contempt for pot/drug users is so over the top. his own son Nick penned a commentary for Vice in June entitled "My Dad, Gene Simmons, Is Full of Shit." He deconstructed his father's archaic support of medievalstyle punishment for drug offenders. Gene continually makes no distinction among various illegal intoxicants, but Nick recognizes a profound difference between pot and hard drugs.



Caitlyn Jenner The former Olympic champion hasn't ripped cannabis. When she was living as a married man, she demanded that (now ex-wife) Kris Jenner rid their mansion of medicated gummy bears before daughters Kendall and Kylie returned home, calling the legal cannabis product "shit." Kris responded by calling her ex "Mr. Buzzkill." If gummy bears are dangerous, Keeping Up with the Kardashians is lethal!



Stephen A. Smith MMA fighter Nick Diaz was hit with a five-year suspension in September for his third positive THC test. ESPN's Stephen A. Smith, who earned his own suspension in 2015 for suggesting that women provoke men's violent physical abuse, condemned Diaz and cannabis. Smith also slagged UFC superstar Ronda Rousey as a possible pot user. Why? Because she defended Diaz, a legal medical cannabis patient.



Kirk Cameron

When he's not making evangelical movies that nobody sees, the former Growing Pains child star fills his personal website with anti-pot dogma like "Marijuana Changes Brains," relving on Scripture as much as shaky scientific evidence to argue that pot causes brain damage. Meanwhile, objective research indicates the opposite: that cannabinoids repair damage and generate new cell growth in the brain.

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26 Highwitness News

Arresting Development

While the marijuana movement has had much to celebrate in recent years, including legalization laws being passed in four states and the District of Columbia, the Federal Bureau of Investigation recently reminded us that the war against weed smokers rages on.

According to the FBI, marijuanarelated arrests in the US increased in 2014 for the first time since 2009. Nearly 701,000 pot arrests were made in 2014, up from 693,058 in 2013. That's a pot-related arrest every 45 seconds—and, incredibly, 88 percent of those arrests were for simple possession.

"It's hard to imagine why more people were arrested for marijuana possession when fewer people than ever believe it should be a crime," Mason Tvert of the Marijuana Policy Project said in a statement.

The statistics are a stark reminder that, despite the many achievements of the legalization movement, there's still much work to be done on the cannabis-law reform front.



Good Fortune Turns Bad for Pot Suspects

A drug task force busted six men unloading 3,500 pounds of pot in the parking lot of the Good Fortune Supermarket in the New York City borough of Queens. The arresting officers, including agents from the DEA, the NYPD and state police, were supposedly working an unrelated case when they just happened to notice the six suspects moving boxes from an 18-wheel tractor-trailer into a smaller truck and van at 1:30 a.m.

The officers say they became suspicious of the late-night activity and claim that the aroma of the weed overwhelmed them as they approached the suspects (even though the pot was reportedly packaged in vacuum-sealed bags). Whatever the actual circumstances, the bust allegedly yielded \$3.5 million worth of pot intended for distribution throughout the Big Apple. Authorities also found approximately \$250,000 in cash in the suspects' vehicles.

SCIENTISTS:

Inside the <u>Wide W</u>orld

EXERCISE GETS YOU STONED



Everyone knows the sense of euphoria that results from performing physical exercise. The feeling of elation-along with a lack of physical pain and anxiety-is known as a "runner's high" and researchers think it's related to the high you achieve through pot. **Scientists** believe a neurotransmitter called anandamide is responsible for the runner's high. Anandamide stimulates the same cannabinoid receptors in the brain that pot does, and produces similar effects. Researchers

studying the runner's hiah noticed that mice had less anxiety and a higher tolerance for pain after running. However, mice that had no endocannabinoid receptors, and therefore couldn't be stimulated by anandamide, experienced no difference in anxiety or pain tolerance after doing mouse exercises.



Celebs: Reform Drug Sentencing

A group of nearly 100 celebrities, actors and athletes is backing the Bipartisan Summit on Criminal Justice Reform. The campaign, known by the hashtag #cut50, aims to reduce the US prison population by 50 percent over the next decade.

The United States currently incarcerates more people than any other nation, thanks in part to mandatory-minimum sentences, "zero tolerance" policing and, of course, the War on Drugs. Reducing draconian mandatory-minimum sentences for nonviolent drug offenses is an overwhelming priority for #cut50. The 91 celebs signing the petition include actress/ marijuana advocate Susan Sarandon, stoner film producer/director Judd Apatow, enail-hot comedian Amy Schumer, hip-hop mogul Russell Simmons, and critically acclaimed actors Edward Norton, Mark Ruffalo and Julianne Moore.

Particularly significant was the support of NBA MVP Stephen Curry of the Golden State Warriors, since high-profile jocks are generally more hesitant to throw their weight behind issues like drug-sentencing reform. You can sign the petition, too! *Go to justicereformnow.org*.

Cops Taunt Pot Growers on Facebook



Some cops with a bit too much time on their hands took to Facebook to troll marijuana growers in Danbury, New Hampshire. Apparently, Danbury police pulled up a few pot plants they found growing in the woods. They then posted a message on the department's official Facebook page:

"If you get home tonight and go for a walk in the woods. And your

summers [sic] horticulture project has gone and you'd like to talk to somebody about it, please feel free to give us a call. We will offer you some counseling to get through your loss." The cops left a business card at the scene so the bereft growers could get in touch.

Guerilla growers plant crops in lightly trafficked locations with the hope of making it to harvest before cops or rippers find their grow. Unfortunately for the Danbury police, there's plenty more where that came from.

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28 Highwitness News



Coming Down Hard

A bundle of pot fell from the sky and landed on a family's garage in the border town of Nogales, Arizona. The package, containing nearly 24 pounds of marijuana, crashed through the roof and smashed a doghouse just below; fortunately, the family's German shepherd was not inside at the time.

Nogales is located just a few hundred yards from the Mexican border, and officials believe the pot was accidentally dropped from an ultralight aircraft or pilotless drone, which are routinely used to smuggle bundles of bud into the United States. A drop will be made in a prearranged area, where smugglers on the ground can collect the package while the craft flies back into Mexico.

In this case, presumably, the weed was dropped early by mistake. According to the local police chief, it's the first time he's seen a load of drugs hit a building.

.....

Uruguay Prepares for Legal Pot

Uruguay, which is fast becoming every stoner's favorite South American country, has officially granted licenses to two companies to cultivate cannabis for recreational use. The country plans to start selling recreational marijuana through pharmacies in 2016.

The newly licensed companies, Symbiosis and ICCorp, are each authorized to grow approximately two tons of weed per year. Both companies are partially financed by the Uruguayan government, which will also provide security for their grows.

Uruguay legalized cannabis in 2013 under former President José Mujica. However, the government dragged its feet awarding licenses to ganja growers, which delayed the implementation of the groundbreaking pot law. Now that it's back on track, Uruguay must still address concerns that the extremely low retail price (\$1.20 a gram) will make it difficult for cultivators to sustain production.

THE MOST INTERESTING MAN IN THE WORLD



In 1985, he crawled away from a plane crash as thousands of dollars in cash rained down around him: in the late 80s, he was busted with nearly 300 pounds of marijuana; now, at the age of 80, he's facing five to seven years in prison for selling as much as 22,000 pounds of pot over the last 23 years. He is the most interesting man in the world.

Octogenarian **Marshall Dion is** rewriting retiree stereotypes. Eschewing shuffleboard and Wheel of Fortune, Dion maintained an active lifestyle by keeping houses in Massachusetts, Colorado and Arizona, as well as a storage facility north of Boston that contained nearly 400 pounds of pot and \$11 million.

Dion was undone by a traffic stop in Kansas. During a search of his truck, authorities found over \$800,000, sparking a federal investigation. Dion is

currently appealing the search. Canada's massive hemp fields fail to meet consumer demands.



Grow Hemp for Breakfast!

The demand for hemp in 2015 will far exceed the available supply, according to estimates by industry experts. As hemp becomes more widely used in a number of products, from food (such as smoothies, cereal and salad dressing) to fuel, the demand for cannabis's cousin is skyrocketing—particularly in the United States. However, Canada grows most of the hemp consumed in the US, and the country's current crop is only on par with last year's yield of 100,000 acres.

Quality hemp production ranges from 750 to 1,000 pounds per acre, but 90 percent of this year's total has already been sold to five major Canadian processors.

The average price for hemp fluctuates from 65 to 85 cents per pound. Hopefully, the US will gain a share of this emerging market as industrial hemp farming slowly gains acceptance here.

Canada Approves Cannabis, Dumps Harper



Justin Trudeau and the Liberal Party swept the Canadian parliamentary election, ousting conservative dunce Stephen Harper from power. The election can certainly be viewed as a referendum on marijuana prohibition as Harper, who had been prime minister for nearly a decade, is notoriously anti-pot. During his failed campaign he doubled down on his prohibitionist stance, making the absurd and baseless claim that weed is "infinitely" worse than tobacco.

The Liberals, led by 43-year-old Trudeau, on the other hand, ran on the promise of sensible pot policy. The party platform states, "Canada's current system of marijuana prohibition does not work. It does not prevent young people from using

marijuana and too many Canadians end up with criminal records for possessing small amounts of the drug."

Canada's newly elected prime minister has promised to legalize marijuana "right away." The Liberals envision a Colorado-style system of recreational sales with federal and provincial taxes applied.



UNRIVALLED INNOVATION

30 Highwitness News

HIGHWIRE

Dispatches from the international drug war. By Bill Weinberg

Peru: Protests Erupt With Arrival of US Troops

Without fanfare in either country, some 3,000 US soldiers arrived in Peru in early September for an anti-drug "training mission." The troops, along with several cargo planes, embarked from the USS George Washington, sparking protests in Lima, the country's capital. Thousands filled the streets of downtown Lima, chanting slogans against "Yankee terrorists" and burning several US flags. Gustavo Espinoza, a former Peruvian congressman, decried the "military invasion" and declared that the US had ulterior motives. "What is looming is a sort of 'sting operation' ... designed to enhance the North American presence not only in Peru but in the Americas," Espinoza said, adding: "The empire seeks to change the correlation of forces now in place in the region."

Also pointing to the harder line the government is taking in the Drug War, Peru's Congress approved legislation in August that allows the country's air force to shoot down small planes suspected of narco-trafficking. The bill was passed unanimously by all of the lawmakers present (89 out of a total of 130) and was promptly signed into law by President Ollanta Humala.

Mexico: Activist Slain in Missing-Students Case

Miguel Ángel Jiménez Blanco, a leading activist in Mexico's violence-torn state of Guerrero and an advocate for the families



El Salvador: Street Gangs Are "Terrorist Groups"

El Salvador's Supreme Court of Justice ruled on August 24 that the country's notoriously violent street gangs would now be classified as "terrorist groups." The ruling defines terrorism as the "organized and systematic exercise of violence" and attaches the label to any group that attempts to usurp the state's monopoly on the use of force. It also upholds the government's ability to freeze the funds of any person alleged to be linked to a terrorist group, as well as a ban on any negotiations with them.

The court's ruling comes amid escalating violence between the rival Mara Salvatrucha and Barrio 18 gangs. Fourteen Barrio 18 members were strangled or stabbed to death inside Quezaltepeque prison in the west of the country on August 22. Authorities said the death orders came from gang leaders in San Francisco Gotera prison in the country's east, as part of an internal purge of Barrio 18.

Warfare between the rival gangs over the cocaine trade has made El Salvador the most dangerous country in the region, overtaking Honduras for the numberone slot. Homicides have reached an average of 16 per day—so bad, in fact, that the death rate now rivals that of the Salvadoran civil war, which ended in 1992. A 2012 government-brokered truce between the two gangs led to a temporary drop in violence, but the truce broke down the following year. The current violence now surpasses pre-truce levels.

of the 43 students who went missing there in September 2014, was found murdered on August 10. His bullet-riddled body was discovered slumped over the wheel of the taxi he owned in the pueblo of Xaltianguis, just outside Acapulco. Jiménez Blanco had led search parties after the disappearance of the students, who were reportedly turned over to a murderous narco-gang after being detained by police.

As the likely fate of the students became clear, Jiménez Blanco helped organize a group called the Other Disappeared, after some 300 families

came forward with concerns for their own missing relatives. The group is composed mostly of women, who meet every Sunday to search the hills for the remains of their loved ones. Since the Other Disappeared began its work, the group has unearthed 129 bodies, which were handed over to the authorities for identification. "We have been saying from the start that this area is a cemetery," Jiménez Blanco told a **BBC** interviewer.

At least 26,000 people have been reported disappeared in Mexico over the past 10 years, an ongoing human-rights crisis that has escalated with the country's militarized approach to the War on Drugs.

Colombia: Guerrillas Collaborating With Paramilitaries?

Colombia's left-wing FARC guerrillas may be secretly working with at least some of their supposed bitter enemies among the country's ultra-rightist paramilitary groups. E-mails released by Colombian authorities on August 5 reportedly reveal that the FARC and the paramilitary group Los Urabeños have been collaborating to traffic drugs and weapons. In one of the undated e-mails, a FARC fighter

calling himself Ruben Manteco wrote to "Pastor Alape," one of the FARC's top commanders and a representative in Havana for peace talks with the Colombian government. The message refers to a gift offered by "Otoniel," the notorious Urabeño warlord. According to the e-mail exchange, Otoniel sent the FARC \$170,000 as a good-will gesture intended to prove his reliability as a business partner. Alape instructed Manteco to accept the gift, adding that he should pursue negotiations on arms deals once confidence in the relationship was established.

Another e-mail exchange discusses plans for a FARC-Urabeño collaboration in drug trafficking. In that exchange, "Roman Ruiz," a FARC commander killed in an army offensive earlier in the year, suggests to Alape that the guerrillas raise the price on cocaine exports. Other e-mails indicate that the FARC provided security to Los Urabeños during their drug operations and also helped broker deals.

The revelations come amid an ongoing government crackdown on Los Urabeños (although Otoniel remains at large). In July, the National Police seized properties worth \$30 million said to be under the control of Los Urabeños—bringing the total of narco-tainted properties seized from the gang to \$74 million. **¥**

For updates on these and other stories, see Bill Weinberg's websites, GlobalGanjaReport.com and WorldWar4Report.com.





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CHECK YOUR LOCAL LAWS REGARDING THE ACQUISITION OF LIVE SEEDS



Greetings for Ganja Lovers

Show your appreciation for that special cannasseur in your life by giving them a KushKard. These stylish greeting cards are designed to hold "any pre-rolled item" (cough, cough): Just remove the plastic placeholder, insert a fatty, write your message, and send it to a friend! The cards even come with a strip at the bottom to use for striking a match.

Chelsea Buttner and Lauren Miele are the *"sativa* divas" behind KushKards. The NYC-based Fashion Institute of Technology grads fused their love of weed and their talent for design to create a line of cards for every occasion. Miele



handcrafted the very first cards by stitching joints onto them, relying on Buttner's master rolling skills to supply the Kush. Now Kush-Kards offers an entire collection to choose from, with cheeky messages like "Just Wanted to Say High," "Let's Burn," and "Keep Calm and Smoke Weed."

The KushKards gals hope that those giving and/or receiving one of their sensi salutations will share the moment with likeminded friends. Inscribe a Kush-Kard, slip in a spliff, and spread the good cheer!

Visit kushkards.nyc.



The party bus has long provided imbibers of alcohol with a way to tour cities around the world while getting a serious drunk on. The buses (which often carry bridal parties) are loud and raucous, simultaneously hilarious and embarrassing, and they can be heard a mile away—sometimes farther, as the trip and the alcohol intake continue.

With pot prohibition going up in smoke, a new kind of party bus has arrived. This kind is much more mellow and—as far as this reporter's preferred activities go—awesome. Instead of barhopping or taking in vineyards, Franco's Fun Bus in Portland, Oregon, serves up endless dabs, munchies, refreshments and entertainment.

"The routes are pre-planned and scheduled for the best viewing experience," explains tour operator Franco. "We love watching the sunset from our executive-coach viewpoint high above the city of Portland. Other routes have taken us down the Columbia Gorge and to the top of Mount Hood."

Franco, a clean-cut ex-Marine, hosts the tours with his wife and team. For just under \$100, a rider spends four hours in a VIP-worthy executive bus. The experience has been highly lauded by those who have tried it since recreational weed became legal in Oregon last July. Two grand rigs with everready enails are always available, along with all the concentrates one could want, with local dispensaries contributing their highest-quality shatters, waxes, live resins and oils to showcase. Which brings us to the gift bag that each rider receives upon departure: Look for concentrate samples, popular strains still in flower form, edibles, and non-psychoactive goodies like balms and creams.

The Fun Bus operates under the umbrella of Franco's Finest, which has been active on the Portland medical scene for years. "Our small farm provides cannabis flowers and our elite extracts to the premium dispensary market," Franco says. "We have our product in several neighborhood shops, including Greeley Gallery and Uplift Botanicals, as well as headlining dispensaries like Oregon's Finest and Harborside Portland." *Mary Ought Six*

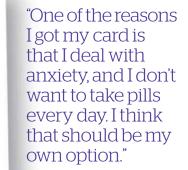
Find out more at francosfinest.com and schedule your dabtastic tour today.



sPOTlight

Funky New Orleans "Cannabis Collection"

New Orleans-based artist Ian Campbell has been making jewelry for more than 20 years. His "Cannabis Collection" line, inspired by the verdant beauty of marijuana plants, features gorgeous images of herb set under polished Austrian crystal cabochons. The gleaming domes are mounted on handcrafted sterling- or alpaca-silver settings. Campbell can also personalize rings, bracelets and pendants using images of your favorite strain. Just send him a high-resolution photo of your frosty buds, and he'll conjure up the perfect cannabis-statement piece for you or yours. \$38-\$169, funkyneworleans.com; \$20 additional charge for custom image.



voice. She experimented with vaping, but found it "too technical and not as much fun." Instead, she indulges in edibles. Following an unfortunate episode in which she found herself "physically paralyzed on the floor... watching the Harmony Korine movie *Trash Humpers*" after eating a heavily dosed treat someone had brought home from a party, she makes her own edibles. "I dose them pretty small," she laughs.

Wolfe, who has a medical marijuana card, frequently gets her weed from Harborside Health Center in Oakland ("Everyone there is really friendly!"). She cites a desire to avoid Big Pharma. "One of the reasons I got my card is that I deal with anxiety, and I don't want to take pills every day," she says, setting her coffee down. "I think that should be my own option."

A stentorian roar erupts behind us: the coffee grinder. Just as well—Wolfe still needs to eat and hike back to her hotel before getting ready for the night's show. When the tour winds up, she'll be heading to Europe, then returning to work on a collab with Chicago-based jewelry maker Hvnter Gvtherer. And when she finally gets home? Wolfe smiles, her calm eyes suddenly aglitter. "I just smoke all the time." *****

AITLIN PARRY (2)



Check Your Bags ... or Maybe Don't! Wolfe doesn't travel with weed-at least not to her knowledge. But "after crossing the Canadian border two times, I found two joints in my purse," she texts. "Whoops!" Happily, Canada's new prime minister wants to legalize weed. Go Trudeau!

Wolfe creates beauly from pain and from smoke.

The Grime and the Smoke Dark priestess Chelsea Wolfe steps into the haze. By Polly Watson

Chelsea Wolfe's music is terrifying. Chelsea Wolfe herself, thank God, is not. Serene, kind, funny and thoughtful, sitting in a Brooklyn coffeeshop that turned out to be (surprise!) a sweaty half-mile walk from her hotel on a searing late-summer day, Wolfe in no way conjures the woman tortured by hell-sent wasp swarms who can be heard wailing on her increasingly well-received records.

The latest, which has brought her to New York, is *Abyss* (Sargent House), a lunar eclipse of an album rife with fuzzy, grinding industrial synths, chiming metallic guitars, and the kind of stunning ethereal vocals that recall those of the Cocteau Twins' Elizabeth Fraser, but huskier, fuller, sadder.

Precocious when it comes to music (she began writing songs in grade school), Wolfe came to weed relatively late, especially when you consider that she's a native of Northern California. "I was in my 20s and got really into it," she recalls. "Then my mom gave me this sort of talking-to, like, 'You really shouldn't just give yourself to this thing.' I started wondering about [whether] it actually does change your personality, and I kind of shied away from it for a while."

Eventually she returned, having determined that smoking was, for her, not just a positive experience but a transformative one. "I'm kind of an anxious person, and my energy is all over the place. I found that it really centered me, because I could use it as a tool when recording or writing. I could totally concentrate on a song."

Wolfe avoids being high onstage. "I've tried performing high," she admits, "and it totally heightened my senses to the point that it was overwhelming—I was playing all the songs really fast!" Though she's an expert joint roller—"I like the process of rolling them; I like that it feels like a ritual"—Wolfe tries to avoid smoking on tour, because it harms her



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Leaf Life

BJ the Chicago Kid works with Dre and rolls his own. *By J. Bennett*

BJ the Chicago Kid reaches into his backpack, pulls out a tobacco leaf the size of a palm frond, and proceeds to roll a massive blunt. "I smoke out of a leaf, not processed paper," he explains. "I call it the 'leaf life.' A lot of islanders smoke out of the leaf—Jamaicans, Haitians—but I learned about it from some producers I was working with in Philly."

Truth be told, BJ—known to his mom as Bryan James Sledge—has worked with everyone from Kanye West and Freddie Gibbs to Kendrick Lamar and Schoolboy Q.

Most recently, the rising R&B and hip-hop star appears on Dr. Dre's new album, *Compton*, which doubles as the soundtrack to the recent N.W.A. biopic *Straight* *Outta Compton.* BJ also cowrote and appears on Jill Scott's "Beautiful Love," from her latest hit album, *Woman*.

"Between Dre and Jill, I was on two number-one records last month," he enthuses. "It's so crazy, man. That's actually the first time I've said that."

BJ just completed a tour with Scott and says she's like a big sister to him. ("She gave me so much good advice," he offers.) When asked if he smoked with Dre during his collaboration with the legendary rap mogul, he's a little more tight-lipped. "What happens at Doc's studio stays at Doc's studio," BJ replies with a laugh. "But it was incredible working with him. Dr. Dre is a genius. Just to see him do what he naturally do—it's still timeless. He drives the best out of you, and he's one of the best people I've ever worked with."

The day High Times met with BJ just happened to be the day the first single from his forthcoming full-length debut, In My Mind, dropped. Entitled "Church," the track features Chance the Rapper and young Compton upand-comer Buddy. "It's called In My Mind because I know I think about a lot of things differently than other people," BJ ventures. "For example, I like rolling my own weed, and I do it a certain way. Most people will break down weed on the table and then roll it. But me, I'll open my fronto leaf and break it up inside of that. It's gonna get

on your fingers regardless, but why I'ma put all the THC on the table? Now the table higher than you!" Born and raised on the South Side of Chicago, BJ moved to Los Angeles in 2002 and quickly began sampling California's ever-evolving array of choice strains. His current favorite is Wonderbrett

OG, which he puffs on a 12th-story balcony overlooking Pershing Square as we talk. Before being introduced to Wonderbrett, he smoked King Louis XIII, Ferrari OG or Girl Scout. "My main shit is *indica*," he says. "Life is too rough not to have some strong weed to balance it out."

Though he prefers smoking leaf blunts, BJ isn't opposed to the occasional vaping session. "I can't do bongs, because it takes my voice," he explains. "But the vape is easier, and the smell is amazing. It just invites you to it, so when that's around, I definitely pack a couple. That shit gets you high so fast, though. With the leaf, I can smoke all day and just do what I do." ¥



All in the Family

BJ has music in his blood: His brother Aaron is a Grammy-nominated gospel/R&B singer and songwriter who's worked with Tyrese. His uncle sang background and played percussion for Motown legend Smokey Robinson.

AITLIN PARRY (2)

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38 Entertainment



Sonorous Space Golden Void know when to leave

some things to the imagination.

Among the thousand hair-splitting strands of "psych" rock currently prickling pointy heads is the one residing in the "tasty" area, let's call it, where a smart, discerning band sets itself apart by virtue of its non-reliance on overproduced, melodramatic cheese to make its heavy points. With *Berkana*, the Bay Area bunch Golden Void provide an object lesson in how an ostensibly psych band—one that employs the same instrumental components as all the rest—can pay tribute to the masters of the past while setting its sights on a new galaxy of sound that transcends its apparent source materials.

"Golden Void" is an ace name for this combo, because they stand out for what they carefully



Berkana

(Thrill Jockev)

omit from their music. The band (ex-Earthless guitarist/ singer Isaiah Mitchell, Camilla Saufley-Mitchell on keyboards, Aaron Morgan on bass, and Justin Pinkerton on drums) make resonant use of emptiness on the album opener "Burbank's Dream," a recombinant, heavy flow of raw-roughness riffs awash in a mellow-edged

tonal bath à la Robin Trower's "Bridge of Sighs," with an anguishing Dave Gilmour–ish ax solo for big, Pink Floyd–y drama. The highly visual effect of tracks like "Silent Season," with its drivingtoward-the-sun compulsion, and "Astral Plane," with its shimmering-desert distortion (dig the Wes Montgomery-on-shrooms guitar solo), owes a lot to producer Tim Green (Fucking Champs), whose always-miraculous mixology colors the air around every note. As in the Quicksilver/Spirit-imbued "Storm and Feather" and the wah-wah-laced thrasher "The Beacon," Green's and the band's less-is-more musicality offers the rare psychedelic experience that you'll want to last all day. *John Payne*

MUSIC RECOMMENDATIONS



David Gilmour Rattle That Lock (Columbia Records)

Picking up his solo career after Pink Floyd's final curtain call, Gilmour delivers his now-signature ambient-slow-build, grandiloquently wailing guitar wrapped like tissue around heady meditations. Tracks like the gypsy-tinged "Faces of Stone," and the bluesy, haunting "Dancing Right in

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us the New Riders' fourth

album, from 1973. The

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hippie country-rock and

were proud heads to boot,

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New Riders of the Purple Sage The Adventures of Panama Red (Real Gone)

BOOK RECOMMENDATIONS



A Narco History Carmen Boullosa and Mike Wallace (OR Books)



Michka & Others (Mama Editions)

For No Good

Directed by

(Sony Pictures

Classic)

Charlie Paul

Reason

DVD RECOMMENDATIONS

Johnny Depp narrates this look at the career of prolific artist Ralph Steadman, famous for his many collaborations with Hunter S. Thompson. But while the documentary is packed with rarely seen B-roll of the duo, little effort is made to relate Steadman's side of events. The slickly produced

Front of Me" with its last-act misgivings stand among his best. But three instrumenture tals on a 10-track, 50-plusminute album bespeaks a certain exhaustion only ound partly salved by Gilmour's acks overwhelming technical vir-Faces tuosity. Good but not great; a little lacking in contiguity and crackle. *Chris Parker*

> track, "Panama Red," an anthropomorphized fable about that high-quality strain. The era is nailed in "Lonesome L.A. Cowboy," in which the Riders sing about "Smokin' dope, snortin' coke / Tryin' to write a song." Guitarist Buddy Cage is the star here, eking fuzzy riffs from his ax. *Michael Simmons*

> model. But the rise of the country's narco-economy was overseen by corrupt elements. Over the past decade, the Mexican Army has been leading the (supposed) crackdown, while the cartels have formed their own paramilitary forces—and the gang wars have morphed into a real war. *Bill Weinberg*

> technical aspects regarding weed and its fascinating history. Others weigh in on the politics surrounding medical marijuana in the United States, Canada and Holland. With 420 beautiful color illustrations and photos, this book is a great addition to your collection of grow bibles and nug porn. *Sirius J*

> film is also unfortunately undercut by an off-key pop score featuring Slash and Jason Mraz. Steadman's ambivalence about the cash machine his printmaking has become provides the sharpest insights into the man, especially when he expresses his fear of becoming a "visual polluter." *Fritz Meier*

to wade through the relentless parade of horrors that is *A Narco History*. But if you want to grasp "How the United States and Mexico Jointly Created the 'Mexican Drug War'", this is the place to start. A century ago, under US pressure, Mexico adopted the prohibitionist

This compilation of essays from some of the biggest names in cannabis culture today will tell you almost everything you need to know about the plant. Contributions by chemist Dr. Raphael Mechoulam, cancer researcher Manuel Guzman and cultivation expert Jorge Cervantes cover some of the

BATTLE OF THE BASE NUTRIENTS PHOLOGOUSTICS PHOLOGOUSTICS

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Dear Big Bud Grower,

For years, we've been telling you about Advanced Nutrients' pH balance-free base nutrients with pH Perfect[®] Technology and how it's the only state-of-the-art technology that balances your pH for you, and holds it in marijuana's "bud growing sweet spot" for a minimum of one week.

The

"Bud Growing Sweet Spot" is a pH range of pH 5.5-6.3

Now, we'd like you to see the proof! We put pH Perfect Base Nutrients and supplements head-to-head against all the other top hydroponics brands and filmed it live for you.

We setup three diverse pH ranges of 4.5, 6.5, and 8.5 – then tested all the top brands against Advanced Nutrients to answer the ultimate question ...

Does pH Perfect Technology really work? And how does it stack up against the competition?



Go Now To: AdvancedNutrients.com/shootout/

Raising the Bud Weights... and Reputations... of Top Growers

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40 Food



MUNCHIES

Romancing the Stone

Snuggle up and get cozy with one of these warming winter weed drinks.

Edible cannabis is unquestionably an aphrodisiac: Imbibing just the right amount creates a feeling of sensuality, contentment and relaxation perfect for a romantic encounter. But if you want to spice up your love life with a dose of edible cannabis, there are a few things to consider first. Make sure your loved one is experienced at eating herb and knows their preferred dosage. A first-timer should start very low-no more than 10 milligrams-since you're trying to conjure a gentle experience, not a full-out panic attack.

High Times February 2016

Timing is also important, since most edibles require up to two hours to take effect. Be sure to give yourselves enough time to enjoy plenty of cuddling while waiting for the edible to work its magic. Eating a large meal can delay the effects even longer, so if you're planning on a Valentine's Day feast, you might want to ingest your edible before the big meal.

These delicious drinks from chef Laurie Wolf take effect quickly and are a less-filling way to imbibe cannabis. Also, mixing up one of these sensual concoctions as a substitute for alcohol will deliver a memorable romantic evening free from hangovers! "A warm, dosed drink is a delightful edible shortcut," Laurie says. "In our somewhat vast experience, warm and wet works quicker!"

So try out either of these cannabis-infused delights if you're in the mood for an enchanted evening. Infused drinks require some whisking or blending to allow the canna-oil or butter to incorporate with your creation. Laurie recommends giving them a quick spin in the blender, which tends to create a frothy, flavorful canna-foam to top off each drink. *****

HOT COFFEE MOCHA MADNESS

3 cups hot, strong coffee 1 cup warm chocolate milk 2 tbsp. brown sugar 1 tbsp. cannabutter Cocoa powder for garnish Combine all of the ingredients except the cocoa powder in a blender. Blend on high for a couple of minutes, then divide the coffee between four mugs. Sprinkle with cocoa powder. Stones 4.

POMEGRANATE MULLED CIDER

4 tsp. canna-coconut oil 3 cups water 2 cinnamon sticks Several strips of orange peel studded with whole cloves 1 cup pomegranate juice 1/4 cup honey or agave syrup 2 black tea bags In a medium saucepan, combine the canna-oil, water, cin-

namon sticks, orange peel, pomegranate juice, and honey or agave. Simmer very gently for 10 to 12 minutes while whisking occasionally. Next, add the tea bags, steep for three minutes and remove, then pour into cups. *Stones 4*.

Recipes for Health & Happiness™ Make cannabis butter, oil, tincture, and lotions at the touch of a button!

No Lie Pistachio Butter BROWNINGS

1 Ingredients

Skill level: Easy Prep time: 10 minutes Cook time: 1 hours

erving size: 1 brownie eld: about 22 brownies (3″ x 3″/8 cm x 8 cm)

1 box double chocolate brownie mix

- 1/2 cup/120 ml MagicalButter Cooking Oil
- 1/3 cup/80 ml Homemade Pistachio Butter
- 8 ounces/225 g Ghirardelli White Chocolate Chips
- 8 ounces/225 g Ebony Silk Sauce (chocolate sauce)

₩How to

- 1. Preheat your oven to 325°F/165°C.
- 2. Combine the egg, oil, water, and pistachio butter in a large mixing bowl.
- 3. Mix in the brownie mix, and stir for 1-2 minutes.
- Pour into a 3" x 3"/8 cm x 8 cm individual brownies pan or an 8" x 8"/20 cm x 20 cm glass baking dish.
- Add the white chocolate chips, and top with chocolate sauce. Bake for 40-45 minutes.

Let your No Lie Pistachio Brownies cool; cut, serve, and enjoy!

Chef's Suggestion:

HID

1/4 cup/60 ml water

1 large egg

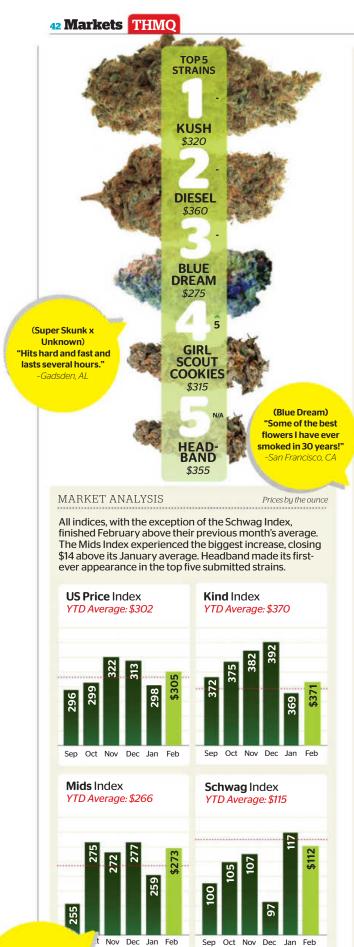
Alternatively, make the Brownie Love Tart recipe, and add Homemade Pistachio Butter, Ghirardelli White Chocolate Chips, and Ebony Silk Sauce (chocolate sauce).

Find recipes at magicalbutter.com/recipes, and watch how-to videos at youtube.com/ herbalbutter.

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Eat To Treat



| STATE | CITY | STRAIN | PRICE |
|----------------|--------------------------|----------------------------------|------------|
| Alabama | Gadsden | Super Skunk x Unknown | \$300 |
| Arizona | Phoenix | Sweet Tooth | 380 |
| Arkansas | El Dorado | Qrazy Grape Ape | 360 |
| California | San Francisco | Blue Dream | 320 |
| | Santa Rosa | Girl Scout Cookies | 150 |
| Colorado | Boulder Denver | Skywalker OG Sour Diesel | 275 300 |
| Connecticut | Hartford | Headband | 350 |
| Delaware | Newark | AK-47 | 375 |
| Florida | Miami | Grand Daddy Purps | 360 |
| Georgia | Atlanta | Purple Kush | 360 |
| Illinois | Chicago | Critical+ | 330 |
| Indiana | Indianapolis | Lowryder | 375 |
| Maine | Portland | | 320 |
| | | Star Dawg | |
| Maryland | Baltimore | Tahoe OG | 375 |
| Massachusetts | Boston | Chemdog | 400 |
| Michigan | Saginaw Traverse City | Girl Scout Cookies Blue Dream | 230 200 |
| Minnesota | Minneapolis | Deadhead OG | 380 |
| Missouri | St. Louis | Headband | 360 |
| Montana | Helena | Northern Lights | 250 |
| | | | |
| New Jersey | Hoboken | Guava Chem | 375 |
| New York | Brooklyn Syracuse | Space Queen OG Kush | 380 280 |
| North Carolina | Raleigh | Blue Dream | 350 |
| Ohio | Columbus | JillyBean | 360 |
| Oregon | Portland | Girl Scout Cookies | 200 |
| | Salem | Banana Kush | 210 |
| Pennsylvania | Philadelphia | Trainwreck | 360 |
| Tennessee | Nashville | Green Crack | 380 |
| Texas | Austin | Pineapple Chunk | 300 |
| Utah | Salt Lake City | Master Kush | 400 |
| Vermont | Burlington | White Widow | 240 |
| Virginia | Richmond | Super Silver Haze | 350 |
| Washington | Seattle | Jack the Ripper Bruce Banner | 220 200 |
| INTERNATIONAL | | | |
| Australia | Sydney | Royal Kush | 280AUD |
| Canada | Ottawa | Durban Poison | C\$200 |
| | Toronto | Jack Herer | 180 |
| | Victoria | Tahoe OG | 160 |
| United Kingdom | London | Chemdog | £250 |

High Times wants to know what you're smoking. Submit your strain information inclue location and price by the ounce to thmq@hightimes.com, or tweet us (#THMQ).

(Chemdog) "Pricey but worth every penny compared to what's usually around." -London, UK

(Qrazy Grape Ape) "Massive colas that sparkle with resin and smell like a grape Jolly Rancher." -El Dorado, AR

ROCKY MOUNTAIN HIGH



1

0 DabLids.com 2

Hot Products

What's new for cannabis cultivators and connoisseurs.

Concentrate Coverage

\$40

1

dablids.com If you leave sticky marijuana extracts exposed, they tend to get covered in contaminants like dust and hair. The new trays from Dab Lids secure your concentrates under a clear cover that's perfect for storage and display. Magnets keep the lid secured above the flat, lower-level tray with a silicone mat. You can even have them customized with a brand or logo.

2 Nailed It

\$325

crystaldab.com Electronic nails seem to be replacing butane torches as the preferred method for dabbing concentrates. The **Crystal Dab Quartz Enail** heats up quickly (to 850°F) and comes with a digital temperature controller but no bulky box to deal with. This affordable crystal nail will allow you to easily enjoy the full flavor and terpene profile of your extracts.

3 A Pressing Matter

3

\$3,600 rosintechnologies.com Rosin is the latest technique for creating cannabis concentrates, using just heat and pressure to extrude essential oils directly from the flowers. With the Pneumatic Rosin Press from Rosin Technologies, you can digitally adjust the pressure and heat to your exact specifications. The press comes with a variety of filters and other accessories for perfect rosin every time.

Odor Eater

4

\$83.97 for a case of 12 rushwarehouse.com Whether in your growroom, smoking area or car, certain telltale aromas must be avoided to keep law enforcement and nosy neighbors oblivious to your activities. Safe and nontoxic, the Breakdown Active Bacteria Odor Eliminator doesn't just cover up or mask odors; it actually eliminates them completely. Simply spray the stinky surface, and offending organic scents disappear for good.

A LITTLE SOMETHING FOR OUR BIGGEST FANS

The success of our award winning Dr. Dabber Ghost pen was not a matter of luck. It was the culmination of a void in our industry and our vision for a better overall vaporizing experience. Two years later we've gained an immense following and shipped products all over the globe. Our low heat coil calibration has proven to be a fan favorite. This year we're proud to announce the Dr. Dabber Light. A vaporizer pen with a smaller profile and lower price that doesn't compromise on performance. Whether you're a seasoned veteran or dabbing for the first time, the Dr. Dabber Light Kit is the perfect solution.

*d*rojabber

20abbe

Check out pens, glass and other vape products at DrDabber.com use the code BIGFAN for a 20% discount store wide. But hurry, because this offer expires 12/31/15



droabber

5

ATTENTION GROWERS: THE BUD-GETING BENEFITS YOU CANT BUY!

When you choose any of Advanced Nutrients' pH Perfect® Base Nutrients, you will also receive 5 Benefits in 1 that are included in every bottle at no additional cost... Other companies might charge hundreds of dollars for the same benefits these products bring you, but they're all included as part of the standard formulations in each of our cup-winning, plant-specific base nutrients. They are...

Balance-Free pH

1. Wet Betty

Wet Betty is a non-ionic surfactant falso called a wetting agent) that lowers the surface teasion of your nutrient-rich water, allowing accient spreading and uptake of nutrients into your plants. That means your plants get the nutrients they crove faster and more efficiently than ever before. Plus, scientific testing by the leading plant PbD in surfactant studies shows Wet Betty (by itself) consistently increases plant growth by an average of 6%.

2. F1

Short-chain Fulvic Acid is still not 100% understood scientifically, but it directly stimulates plant growth and is 1,000 times smaller than humic acid — making it easily utilized by your plants. Fulvic Acid is also a natural chelator that gives you quicker nutrient absorption, transport, and enhanced cellular metabolism.

3. H2

Introducing long-chain **Humic Acid** to your root zone is like building a "condominium complex" for beneficial bacteria and fungi, giving them en optimal structure to flourish in.



4. Amino Acids



Amino Acids Many athletics supplement with amino acids to help feel muscle growth because they to the assential "building blocks" of protein. In the same way, your plants benefit from amino acids in Advanced Nutrients base nutrients feel metabolic pathways

for enhanced essential-oil production and are critical to the construction of cell walls in stems, leaves, and flowers.

5. Balance-Free pH Perfect® Technology

When you use any Advanced Nutrients base nutrient, the pH Perfect[®] Technology inside automatically stabilizes and locks in your pH within the optimal range (called the "sweet spat") of pH 5.5–6.3—and keeps it there for one week. No more pens. No more meters. No more being chained to your nutrient reservoir, checking and adjusting pH, because the scientific formulation does it for you. Plus, with a theoretical absorption range between pH 1 and pH 10—this technology acts as a built-in safety net ensuring your plants can always feed and even if some error or bad water source takes the pH above or below where it should be, you'll still be able to turn a good crop.

AGAIN YOU CAN'T BUY THESE 5 BENEFITS IN 1-THEY'RE OUR GIFT TO GROWERS EVERYWHERE AND INCLUDED AT NO COST IN EVERY BOTTLE OF ADVANCED NUTRIENTS DH PERFECT® BASE NUTRIENTS!

To Find Out More Go Now To: AdvancedNutrients.com/5in1







Raising the Bud Weights... and Reputations... of Top Growers

HYDRO 2016

Growing marijuana without soil can lead to much faster growth rates and bigger harvests. In our annual special report, the High Times Cultivation Department reviews the basics of hydro growing and discusses the latest technology and techniques that can increase your garden's productivity and overall yield.

By Sirius J and Danny Danko

Plants exhibit explosive growth rates in hydroponic gardens.

OCH

UPGRADE TO HYDRO

If growing in soil or a soilless mix is comparable to driving a regular car, then growing hydroponically is like driving a Ferrari: You can achieve much faster growth and substantially larger yields, but the potential for a serious crash is also much greater. Every single element, especially the nutrient solution's temperature and pH and the level of plant food in the reservoir, must be kept dialed in at all times. Any fluctuations can result in immediate negative results, and plant death is always just one mistake away. But the rapid growth rates and massive yields that can be achieved hydroponically are hard to resist. So if you're interested in getting behind the wheel of that Ferrari, read on...



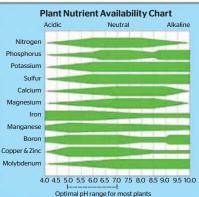
IS HYDRO GROWING HARD?

Soil is forgiving, and hydro is demanding—but why? Not only is hydroponic cultivation more sensitive to changes in pH; it also requires that the nutrient solution be kept at a pH level lower than that for soil growing. All of this stems from the fact that hydroponics use inorganic salts in the nutrient solution instead of the organic macromolecules present in fertile soil humus (see "Can Hydroponics Be Organic?" later in this article for more).

Organic macromolecules can stay in solution at a wide range of pH levels; symbiotic fungi and bacteria also cooperate

with plant roots to create an optimal environment for nutrient absorption. Humic- and fulvic-acid molecules, which carry essential elements to the plant roots, have various "binding sites" where ions like potassium, manganese, calcium, etc., can attach themselves. Traditional hydroponics, on the other hand, use a completely different





set of molecular tools to deliver mineral nutrients to your plants.

Since plants require 16 different mineral elements to flourish, nutrient producers simply mix up the different compounds in one container. A little calcium chloride here, a little zinc sulfate there, and *voila*—you have yourself a synthetic nutrient solution. But, obviously, it's not quite that simple: Once these salts dissolve, they form ions in the water, which each require a specific pH range to stay in solution. If the pH rises or falls too much, certain elements may precipitate or fall out of solution and cling to the sides of the container.

Bringing the pH back to the ideal range should, in theory, fix this problem, but the solution may require vigorous mixing to return it to full potency. Hydro growing's ideal pH range of 5.2 to 5.6 is based on a careful calculation that balances all 16 essential nutrients to make sure they stay dissolved and available to the plant.



PASSIVE VS. ACTIVE HYDRO

Passive hydroponic systems utilize a wicking process that pulls the nutrient solution up to the roots without the use of devices like water pumps. Active hydroponic systems, on the other hand, use pumps to move the nutrient solution to the roots in timed intervals. This allows more oxygen to reach the roots, resulting in stronger growth. Passive systems tend to keep the medium too wet and are not recommended for production gardens due to the lack of oxygen reaching the roots.

FLOOD & DRAIN EBB & FLOW

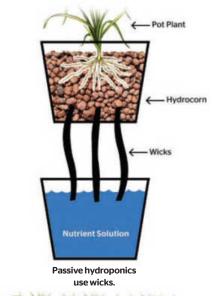
Flood-and-drain (also called ebb-and-flow) systems use a pump inside the reservoir to periodically fill plant trays with nutrient solution. Depending on the medium used, a timer causes the pump to "flood" the tray three to four times per day, thereby supplying the roots with food and water. The solution then drains back into the reservoir for future feedings. It's important to oxygenate the nutrient solution with an air pump and airstones to provide plenty of dissolved oxygen to the roots.

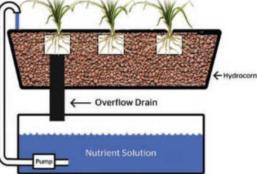
NUTRIENT-FILM TECHNIQUE

The nutrient-film technique (NFT) uses a constant, shallow flow of nutrient solution from a tube to feed the roots, which dangle down into a trough. Most units use round PVC tubing or square plastic fence posts for the trough. Plants in mesh pots (typically filled with grow rocks) are placed into holes cut into the top of the trough at intervals of a foot or more. As in a flood-and-drain system, the nutrient solution flows back into the reservoir, but here the pump runs constantly instead of intermittently.

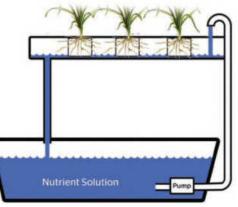
DEEP-WATER CULTURE

Each plant growing in a deep-water culture (DWC) system is contained in its own individual bucket. A hole in the bottom of the bucket allows the roots to hang down into a well-oxygenated nutrient solution. Individual buckets can stand alone or be connected to a central reservoir and controller that keeps each one filled to the level necessary for the plants to thrive. DWC allows growers to extend the vegetative stage in order to grow much bigger plants, because there's plenty of room for roots to expand quickly in this setup.

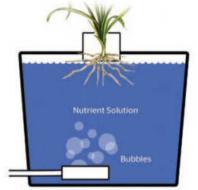




Ebb & Flow periodically floods grow trays.



NFT systems have a constant flow of nutes.



DWC relies on a well-oxygenated nutrient solution.

HYDRO GLOSSARY

INORGANIC SALTS: These are ionic substances purified from mineral sources, such as sodium chloride (NaCl, or table salt), magnesium sulfate (MgSO₄, or Epsom salt), potassium nitrate (KNO₃, or saltpeter, a component of bat guano) and so on. Neither ion in the salt is carbon-based; if one were, it would be classed as an organic salt or chelate.

CHELATE: Derived from the Greek word (*chelè*, meaning "claw"), a chelate is a compound formed from an organic chelating agent and an inorganic element. Mineral supplements and organic fertilizers alike use chelates because they are more available for absorption.

HUMIC ACID: A complex mix of large molecules from decaying organic matter that binds minerals in the soil. Fertile soil should be heavy in humic acid, a big component of humus. Conversely, soil can become too infertile if contaminated with aluminum, because each aluminum ion takes up three binding sites, displacing other minerals.

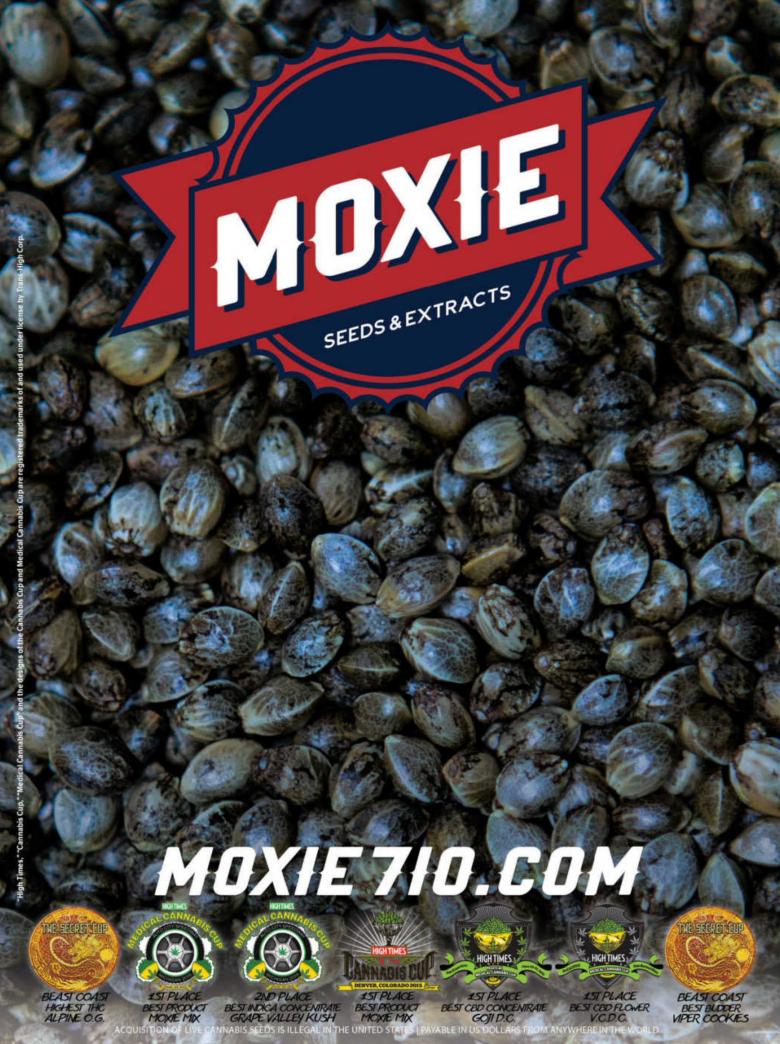
ppm: The abbreviation for "parts per million," ppm is the unit for measuring small amounts of substances in water, such as dissolved minerals or gases.

TDS: The abbreviation for "total dissolved solids," this is the measurement of ionic substances dissolved in water. TDS meters measure the electrical conductivity of water in milli-Siemens per centimeter (mS/cm), and most meters automatically convert this unit to ppm, a more universal way of measuring total dissolved solids.

pH: A measurement of the amount of acidic protons in water. Low pH means more acidity; high pH indicates a basic solution with fewer acidic protons. The pH scale runs from 1 to 14, with 7 being neutral. Keep the pH at around 5.2 for optimum nutrient availability in hydro growing. The pH for soil growing should generally stay around 6.5.

DISSOLVED OXYGEN (DO): Oxygen

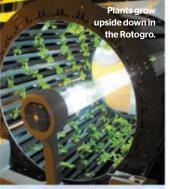
naturally dissolves in water, depending on the temperature and pressure. Room-temperature tap water will have 7 to 8 ppm of DO. Unless you grow on a very large scale or need to troubleshoot problems with poor oxygenation, you probably won't need to buy a DO meter. Airstones provide enough oxygenation, but new technologies have been developed to super-oxygenate water.



9 HOT NEW HYDRO PRODUCTS

ADVANCED NUTRIENTS' PH PERFECT CANNABIS-SPECIFIC BASE NUTRIENTS

advancednutrients.com Advanced Nutrients' pH Perfect technology uses a specially calibrated system of buffer compounds to ensure that your nutrient solution doesn't require any pH adjustment, which can be an annoying task (plus if you use too many pH-adjustment chemicals, you may expose your plants to excessive nutrients and TDS). Not only does pH Perfect self-adjust; it keeps the pH stable until you need to change out the solution.



ROTOGRO rotogrow.com

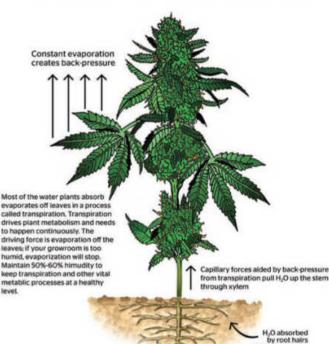
The Rotogro concept represents one of the most advanced concepts in compact cultivation to date. By having the plants grow out of small hydro trays placed in a rotating cylinder, the system maximizes its light usage 100%, eliminating the need for reflectors. The constant slow rotation also serves the same function as using fans in your garden, strengthening the plants' stalks and fostering sturdier growth. Plus the Rotogro units are stackable, allowing for large and frequent harvests.

EVA-DRY E-333 MINI DEHUMIDIFIER eva-dry.com

Designed for smaller spaces, this ingenious device is 100% renewable, eco-friendly and will last up to 10 years with proper use. For spaces under 333 cubic feet, this small device passively absorbs 4 to 6 ounces of moisture before it becomes full. Then you simply move it somewhere else and plug it in, and after 10 to 12 hours it will be ready to reuse, again and again and again.



HOW DO PLANTS DEFY GRAVITY?



AEROPONICS

The big difference between hydroponics and aeroponics has to do with nutrientdensity delivery. Because aeroponic growing uses a fine mist or fog to deliver the nutrient solution directly to the dangling roots, the plant is able to absorb water, food and oxygen at a tremendous rate. The key to success with aeroponics is atomizing the water to break down its molecules to their smallest possible size. Because the molecules are so small. capillary roots absorb them directly into plant cells; larger molecules bead up and have a harder time being absorbed. Proceed with caution, though, because any clogging of the misters or pumps can be catastrophic.

HYDROPONIC MEDIUMS (SUBSTRATES)

Instead of soil, hydroponic systems use a variety of substrates or mediums to hold roots in place. Rockwool, created by heating and spinning rocks into fibers, is popular when using flood-and-drain systems or drip emitters due to its ability to hold water while still allowing oxygen to reach the roots. Coco coir, produced from the fibrous outer layer of coconuts, provides a natural and biodegradable alternative to rockwool that many find easy to work with. Perlite and vermiculite, typically used as additions to soilless mixes such as peat-based formulas, can also be used as stand-alone mediums for hydroponic growing. Finally, grow rocks (also known as expanded clay aggregate) are a lightweight, porous, inert medium made from baked clay; they promote oxygen at the root level and can be reused after a proper rinse with hot water and bleach to sterilize them.







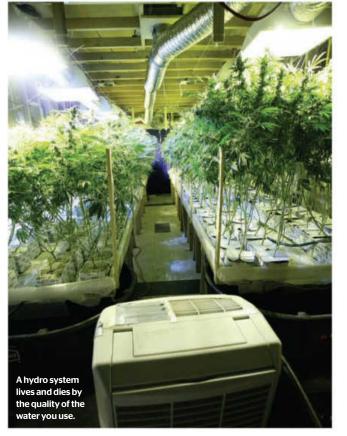
ALL ABOUT WATER

Impurities, air quality and differences in temperature can cause unexpected changes in your nutrient solution. In order to troubleshoot a hydro setup, you'll need to know some of the basics about water to understand how these things can affect your grow. All water may seem the same, but subtle differences in chemical composition can have a big impact on how you make your nutrient solution.

WATER QUALITY: It helps to

know some specifics about the quality of the water coming out of your tap. The presence of certain minerals, such as calcium and sodium. can affect the water's pH, TDS and buffering capacity. Drinking water shouldn't exceed a TDS of 500 ppm, but if it gets close to that value, its buffering capacity will likely be higher, and you'll need to use a larger amount of pH adjuster to get where you need to be. Impurities such as heavy metals and excessive chlorine are undesirable, and it's a good idea to use some kind of filtration method to combat them.

TEMPERATURE: The reservoir's pH level, dissolved gases, bacterial growth rate, etc., are all dependent on the temperature of



the water you use. By definition, pH is directly dependent on temperature, so it's best to let your reservoir water equilibrate to room temperature before making any adjustments, because water coming out of the tap is normally around 50°F, and wherever you place your reservoir will likely be warmer than that.

It's hard to predict pH changes that are dependent on temperature, so keeping a log of the temps and pH levels will help you demystify any unexpected issues specific to your setup. Also, colder water holds more dissolved oxygen, which roots need to survive. Reservoir water that's too warm will hold less dissolved oxygen and also promote the growth of bacteria and algae.

GASES: Supplementing your growroom with carbon dioxide can increase plant mass, but it can also impact the pH of your nutrient solution. Carbon dioxide in the air naturally dissolves in water to form carbonic acid, decreasing the pH. If you decide to start using CO₂ supplementation halfway through your grow cycle (say, for flowering), pay close attention to the pH of the nutrient solution around your plants, because you may need to adjust it upward. If you use bubblers and airstones to maintain healthy oxygenation, keep in mind that they will also promote the CO. being dissolved in the water, potentially decreasing the pH locally around the bubbles. For this reason, be sure to take measurements at different locations. If you find the pH or temperature of your water changing drastically from one spot to another, you may want to take measures to ensure that the water constantly mixes to avoid dead zones of poor oxygenation or localized nutrient deficiencies.

9 HOT NEW HYDRO PRODUCTS

NATURE'S NECTAR NUTRIENTS ez-gro.com

Using organic nutes to grow hydroponically was once a problematic affair, with drippers, misters and pumps clogging up thanks to a thick nutrient solution that never seemed to mix right. These days, certified organic Nature's Nectar Nutrients provides a natural blend of readily available plant foods with no sediment or buildup. Customize your NPK (nitrogen, phosphorus and potassium) regimen with bottles for each individual element-and they're also great for foliar feeding.



FLORAFLEX ROCKWOOL CAPS floraflex.com

Any time light and water meet, algae can develop. Uncovered rockwool cubes quickly turn green, and the muck that forms there actually competes with your plants for nutrients. That's why smart hydroponic cultivators use FloraFlex Rockwool Caps to cover their 6-inch cubes and prevent algae from forming. The caps, made from BPA and lead-free plastic, are also stackable, reusable and dishwasher-safe.

THE LIVING PANTRY AEROPONIC TOWER GARDEN LINE

Vertical growing maximizes yields in a contained footprint. The Living Pantry Aeroponic Tower System featured on our cover starts with 30 plant sites in a 3' x 3' space and can be stacked three units high for up to 90 plant sites in the same floor area. These affordable units use a pump to mist roots with nutrient solution for optimal growth, while saving and reusing water and nutrients in a closed-loop system. The units are powered by DC electricity, but you can also choose solar, wind or battery power.

FloraFlex

GROW MORE FOR LESS with GODFATHER 2.0 BY HYDROPONICS GROUP

- 78" tall, 78" wide, 51" deep.
- Size for 700+ clones!
- Harvest 50 mature plants.
- Yields up to 5 to 7 pounds every 10 to 12 weeks!
- More room = bigger harvests.
- 181 cubic ft. SIZE does matter.
- Feeding & Lighting schedule / Lifetime support.
- Sexy modular design makes installation easy.
- High output 5W per diode adjustable LED systems.
- Your choice: One-touch selfwatering soil or Hydro system.
- Raptor Odor Controller = odorfree gardening.

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AS SHOWN \$5399.90 STARTING AT \$4399.90

GROW DADDY LED



LED \$3799.90

STARTING AT \$3399.90

- 77 cubic feet of grow space.
- 77" tall, 57" wide, 30" deep.
- Grow, Micro, and Bloom nutrients.
- 600W LED available.



GROW IN THE ROUND.

- 6t. tall, 3ft. in diameter.
 Scientifically designed to max out light penetration and improve air flow for massive harvests.
 Hydro or Organic, HID
- or LED Your choice!
- Fully automated, dynamic timing, lifetime support.
- Ask about our Triple Threat
 Harvest every 5 weeks!

BUD BUDDY

- 62 cubic feet of grow space.
 - 77" tall, 47" wide, 30" deep.
 - Zero condensation issues.
 - Choose from soil pots or hydro tubs.

LED \$2799.90 STARTING AT \$2399.90

CALL YOUR HYDROPONICS GROUP REPRESENTATIVE AND GET STARTED TODAY! HYDROPONICS GROUP IS COMING UP FOR SALE!

High Times February 2016

CAN HYDROPONICS **BE ORGANIC?**

In its essence, hydroponic growing is artificial-it creates conditions similar to a perfect natural environment synthetically-so how could it be organic? Hydro growers address this question by using complex organic molecules over simple chemical salts in the nutrient solution.

The never-ending process of organic material decaying on forest floors leaves behind a rich slew of soluble compounds that chelate, or bind to, the minerals that plants need to survive. Instead of inorganic nitrates and ammonia, organic nutrients use amino acids to supplement the plants' nitrogen demands. Unlike inorganic salts, these organic compounds allow your plants to absorb essential elements at a wider range of pH levels.

While these compounds are ideal for plant nutrition, they create drawbacks due to the fact that they're completely organic.

In a hydro reservoir, they can oxidize or otherwise evolve to form insoluble precipitates that settle at the bottom and clog up pumps and sprayers over time, thus requiring more frequent reservoir changes.

Many modern organic nutrients solve this dilemma by using stable mixtures of pure mineral chelates that aren't as sensitive to change (though it helps to monitor the pH to track this). Organic nutrients, which are literally nature-derived, use

extracts of substances like peat moss, biochar and seaweed, often supplemented with natural sea or rock salts. Thus, when taking pH and TDS readings of an organic nutrient solution, don't be surprised if the TDS is lower than that of a standard hydro solution.

Despite having to master these different technical aspects, many professional growers swear by organic hydro for its ability to promote terpene production and rich flavor.

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THE SUSTAINABLE FUTURE OF HYDRO

Many cannabis growers have adopted hydro for its consistent dynamic performance when done correctly, but the rest of the world is looking at hydroponics for another reason: It can be very environmentally friendly, especially with a new wave of sustainable agriculture stimulating the development of new techniques. But apart from cannabis itself, what makes hydro growing so green? By keeping a close track of the nutrients your crops use over time and adding essential minerals to the same recirculated water, hydroponics can use up to 90% less water than soil growing.

Even at night, irrigation loses 50% of the water to the air and as runoff. Stricter environmental regulations will force farms to go green, and they may also have to use hydro techniques to prevent fertilizer runoff, which is harmful to aquatic ecosystems. New techniques like aquaponics, which some cannabis growers have adopted, create a balance between fish and plants in a closed-loop system that uses very little water. Some aquaponic setups have even been able to achieve a completely self-sustaining environment that turns sun and air into crops. ¥

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An expert in the art of hash-making reveals his tips and tricks for producing beautiful full-melt hashish. Learn the secrets to isolating the gland heads filled with cannabinoids and flavorful essential oils all without the use of solvents or ice water.

Bubbleman's FOID-MERTDRYSET Story & photos by Bubbleman

64 Full-Melt Dry Sift

High Times February 2016



Using a stiff card, gently rub the cannabis over the screen. (I used my ski-pass card here, but any rigid card will do.) Be sure to get as much of the resin to fall through as possible. Just remember when you do this that you'll also get a lot of contaminants passing through the screen. But that's okay-that's the reason we use several screens, even though it makes for a longer cleaning process.



Getting Cleaner

Let's lift the top screen and see what's fallen through. Remember, we just did a super-quick run, because the main point here isn't to make a ton of product; it's to show you how to clean what you've extracted.

Gear Up!

The process of extracting full-melt, dry-sift hashish requires three separate screens. The example shown here is my Bubblebox, but you don't need it to produce dry sift—only the screens. The box uses three, at 14Ou (microns), 107u and 7Ou. Three screens will give us just the control we need to produce the kind of full-melt dry sift that is, in my opinion, the holy grail of hash.

So let's open up our Bubblebox and get started. If you don't have a Bubblebox, you can order one at freshheadies.com. If you're not as committed to having top-quality tools, you can buy just the screens for less than half the price. As you can see, the Bubblebox is built to last, with bird's-eye maple and doublestrength hinges. The screens come with a wooden cover on top and a set of keys to lock it when you're done using it. If you decide not to purchase the box, you can get the screens stretched over frames by your local silk screener.

Using the Screens

Originally, I created this box for people who didn't normally make or even smoke any hash. I figured they could break up their joints over the screens and collect the resin that way. Really, though, what I unwittingly ended up doing was to teach them how to make great dry-sift hashish.

The top screen on the Bubblebox is 14Ou, which is the perfect size for gland heads to fall through. Some strains may have larger heads, but generally 14Ou is a safe size for the top screen. Breaking up your nuggets into powder is ideal for dry sifting, and this top screen will keep the majority of the plant material on top while allowing resin glands and other particles to fall through.



You'll learn quickly that the more gently you extract the initial batch, the easier it'll be to clean up.

The second screen is 107u. (I've also put the screen sizes in LPI, which stands for "lines per inch.") Here's the material that was carded for about three minutes over the 140u screen and produced a single-screen dry sift—which, to the naked eye, looks great. However, with the help of a macro lens, I'm going to reveal why most dry sift does not melt.





A closer look at the dry sift reveals a lot of capitate stalks and cystolith hairs (those long, white things). These are non-glandular and non-medicinal. This is a farmer's-grade sift that desperately needs to be cleaned using a second and third screen. What we can do is place this 14Ou-screened hash on top of our secondary (107u) screen and gently card the material back and forth. You must be gentle while doing this. Made in Grass Valley, California, the BLADELESS TRIMMER™ is the newest innovation in a growing industry. It's faster, the finished product looks better and there's virtually no clean up! The BLADELESS TRIMMER™ is the perfect addition for your business, from industrial-sized shops to home-growers.



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This screen may still allow a lot of contaminants to fall through, but that's fine: What we're doing is breaking up the powder to ready it for further cleaning. The next screen will clean out everything we don't want. screen. Pretty much everything came through, but now it's smoother and more broken down, which will make the next steps using the third screen easier.

Carding Back and Forth

After carding the material for about five minutes, this is what was under the second

After 10 minutes of gently carding back and forth on the third (70u) screen, all of the non-glandular material should fall through, leaving us with a much cleaner product. I'll card it for an additional five minutes to show you how clean it's getting. This is patient work, so take your time.

After 10 minutes of carding, the dry sift is cleaner-looking to the trained eye. However, it's not clean enough: It still contains over 50% contaminants. Let's get back to work.

The dry sift is starting to look better after 15 minutes of carding over the 70u screen. There's still plenty of unwanted plant matter here, but much less than when we started. At this point, we're around 35% non-glandular material in this dry sift, so clearly we're not done.





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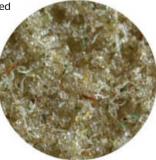


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PERMIT ACQUISITION - CULTIVATION - GENETICS Clade9.com (626) 940-5626 Here we have the same material now worked for 20 minutes, and you can tell it's getting cleaner. We're seeing fewer and fewer capitate stalks and cystolith hairs and more of a concentration of glandular trichome heads.

After 25 minutes of patient carding, the dry sift is approaching 80%-plus pure gland heads. This should now melt in a bowl. Let's give it a try...



Gland heads with some stalks and hairs



It's Melting!

The dry sift is melting, but it's nowhere near what I'd consider full melt. It tastes amazing, but we have some more work to do. After carding for 30 minutes, the hash is closer to 90% purity. It still contains some contaminants, but it's melting much more readily and the taste is more concentrated.

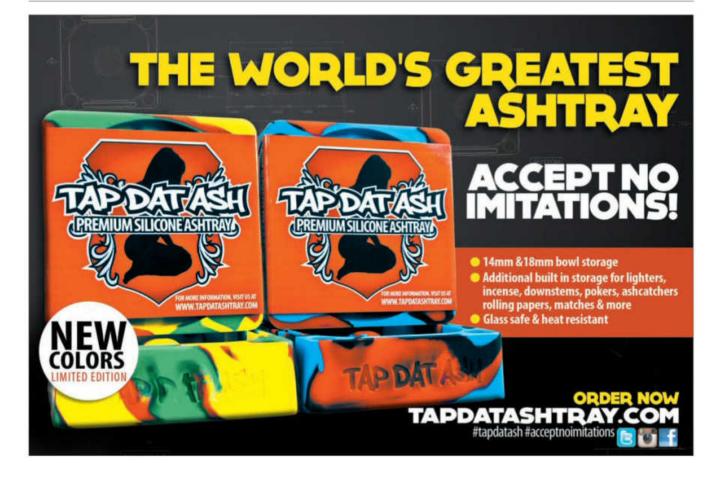


90% pure dry sift

Okay, so this is what we've been waiting for: 95%-plus pure gland heads. I've been getting the dry sift cleaner and cleaner, and although I can't make a kilo at a time yet, I can definitely get those heads to near-99% purity in small amounts. Here's what it looks like after 35 minutes of gentle



Purity is increasing.



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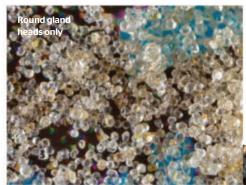
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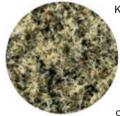


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And here's a shot of almost 100% pure gland heads.



Keep in mind that the 7Ou screen will let some gland heads fall through, but since these are smaller than 7Ou, they're generally not the best of the best. Some people enjoy their 45u bubble hash,

but I like to smoke the 12Ou to 73u product. Whatever falls through to the catch plate is best used for making edibles, and the finest hash is what remains on the 7Ou screen after the final carding.



Fire It Up!

I wouldn't want to end an article on such a powerful technique without at least testing some of final product, so here it is going into a bowl.

The last shot clearly shows that "If it don't bubble, it ain't worth the trouble," and "When the dome is clear, pure THC is near." And so, until next time, may the full melt bless your bowl! \leq



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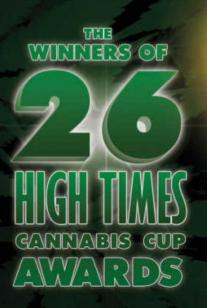
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The road wasn't easy, but neither bugs nor drought nor fire could stop the growers of California from reaping another bountiful harvest. *Story & photos by Dan Skye* High Time:

Emerald Family Farms is a group of growers from the Emerald Triangle striving for best practices in the field. In this Humboldt County garden, a grower works among the 15-footers.

MALO IN



California's unseized marijuana harvest in 2013 was worth \$31 billion—more than the combined value of the state's top 10 legal farm commodities.

id-September, 2015: Like most other days in drought-stricken California this past summer, the skies were blue and cloudless. The temperature in Mokelumne Hill, about 140 miles east of the San Francisco Bay Area, hovered just above 100 degrees. The cannabis farmers of Nothing But Nectar Farms performed their daily garden duties mechanically in the heat. Harvest was just a few weeks away. Off in the distance, about three mountain ridges away, a plume of smoke appeared.

Uneasiness set in. Fire in the parched hills.

Apparently, a Pacific Gas and Electric power line touched a live tree and ignited the blaze. In less than 24 hours, the fire hopped the Mokelumne River, then State Highway 26 and headed their way.

The growers evacuated and expected the worst. But a day later, they discovered that the reports of what had burned down were wildly inaccurate: They were actually breakfasting in a café that had been listed as destroyed! The Nothing But Nectar team sneaked past roadblocks and returned to the farm, following an off-road path through the scorched forest. Remarkably, their house was still standing. One garden had indeed been lost, but another survived, though the plants were in critical condition, deprived of water and adequate sunlight for 48 hours.

Over the next five days, the team coordinated their efforts, rigging a generator to the only well still in operation and hauling hundreds of gallons of water on their truck. They saved their gardens and harvested in the ashes all around them.

With California locked in a devastating drought, a bad fire season wasn't unexpected—but this was the worst in the state's history. Hundreds of other growers lost far more than just their gardens: They lost homes and property and their prized genetics. In a very cool move, DNA Genetics stepped up and provided free seeds to those affected. Still, recovery from this kind of loss is never easy.

No silver lining exists in this kind of devastation, but growers who were able to harvest this year will definitely profit from the reduced statewide yield. In fact, prices for outdoor pot have risen dramatically over the past two years. In 2014, epic damage was caused in both indoor and outdoor gardens by russet mites, also known as broad mites, exacerbated by the sale of infested clones from dispensaries. By some estimates, a third of California's harvest was lost to these microscopic creatures, which are capable of ruining an entire crop. For many growers, this past season was a time to go back to basics: to grow from seed and treat their plants with a soak solution at an early stage. (Some growers use a homemade mixture of dishwashing liquid and cottonseed oil; others prefer Clean Green-certified products.)

But the most significant factor contributing to the spike in price is simple demand. There are more people using cannabis than ever before, and consumers aren't just smoking it these days. The market for canna-oils is booming; edibles and topicals both require a steady supply of product; and, as we all know, dabs are in high demand.

Not only has the price per pound for outdoor pot risen over the past two





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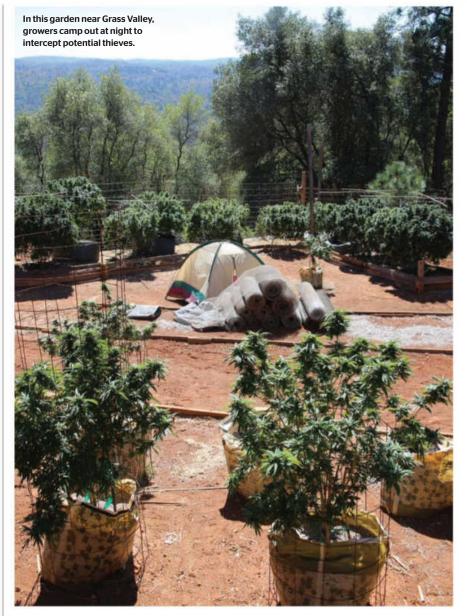
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years—from a rough average of \$1,200 to the \$2,000 plateau and beyond—but growers can now expect \$50 to \$100 per pound for good trim, and \$200 per pound for the tiny buds left over from trimming.

According to Paul Starrs's *Field Guide* to California Agriculture, as well as a report by Josh Harkinson in Mother Jones, California's unseized marijuana harvest in 2013 was worth \$31 billion more than the combined value of the state's top 10 legal farm commodities. California NORML estimates that taxed and regulated marijuana could generate \$2.5 billion in tax revenue for the state.

Standing in his garden of 20-foot plants, which he predicts will yield 10 to 11 pounds apiece, an anonymous Humboldt County grower says: "Clearly, we're on the cusp of change. Demand for good product increases daily, and the government can't continue demonizing those who grow marijuana, much less use it."

The hope for legalization beyond medical use has marijuana-law reform activists working hard. Several groups are gathering signatures for their proposed 2016 ballot initiatives. ReformCA's is believed to have the best chance: It seeks to legalize adult possession in limited amounts, create a tax structure and have cannabis designated as an agricultural product, while still allowing limited personal cultivation.

There's also the California Cannabis Hemp Initiative (CCHI), otherwise known as the Jack Herer Initiative. Jack Herer, of course, is the father of the modern cannabis movement. Though he died more than five years ago, his legacy still inspires hordes of activists. One of these is Buddy Duzy, who spearheads the CCHI. He argues that it's very different from ReformCA's effort. "I think the ReformCA measure attempts to appease the federal government," Duzy explains. "Our initiative challenges the government and asks that the US Constitution be respected. It's also far more expansive in addressing hemp agriculture, which Jack always championed."

Meanwhile, in the medical marijuana arena, California's politicians continue to wrestle with the meaning of Proposition 215, which voters approved nearly 20 years ago. At the end of the 2015 legislative session, lawmakers passed three bills aimed at developing rules and licensing procedures for the cannabis industry. Dispensaries would be required to operate in accordance with local guidelines before being granted a state license. They would also be permitted to operate on a forprofit basis. On October 9, all three bills were signed by Governor Jerry Brown.

What's often lost in the political and bureaucratic wrangling over cannabis—and the rush to make big bucks off this burgeoning industry—is that it all begins in the garden. A simple concept, right? Without growers who care deeply about their crops, the cannabis industry wouldn't exist. And doesn't a crop that generates over \$30 billion deserve a level playing field?

"I see cannabis as the last bastion of the American farmer," says Dave, who oversees a garden in the Grass Valley area. "We control our crops; we work hard, bring them to harvest and decide who we want to sell them to. We get to be around family and friends—and our dogs. I'd hate to see that change, but it doesn't worry me. Growers who know what they're doing are the foundation of the cannabis industry."

It's hardly surprising that California cultivators have grown tired of hearing about the economic miracle being wrought in Colorado. And why wouldn't they? They've been at the game a lot longer—especially outdoors.

Some families in California boast three generations of growers. They've developed outstanding genetics and can call upon years of experience in the field. Moreover, the farmer's life that Dave evokes is far more conducive to neighborly acts, such as the sharing of wisdom and pitching in during a crisis, than industrialized agriculture.

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Triangle-Humboldt, Mendocino and Trinity counties-whose mission statement reads: "Cannabis is a way of life; it's all around us, it's part of our culture, our history and our legacy. We set the standard by growing organically and by following the best management practices. We've committed to go above and beyond what county and state ordinances require, by striving for water independence and fully environmentally mitigated farms."

The collective's Emerald Heart line of medical can-

nabis products is composed entirely of its F*** Cancer strain, a high-CBD variety available in a salve, a capsule and the oil itself. The Emerald Heart line will soon offer suppositories, sprays, patches, vape pens and tongue strips as well.

An estimated 25,000 cannabis farms of one size or another can be found in the Emerald Triangle. Some work strictly within state and county guidelines; others, not so much. Plenty of product gets shipped out of state, where it earns a



far higher price than in California's dispensaries, but many farmers want a landscape that nourishes a completely legitimate cannabis economy. They seek transparency.

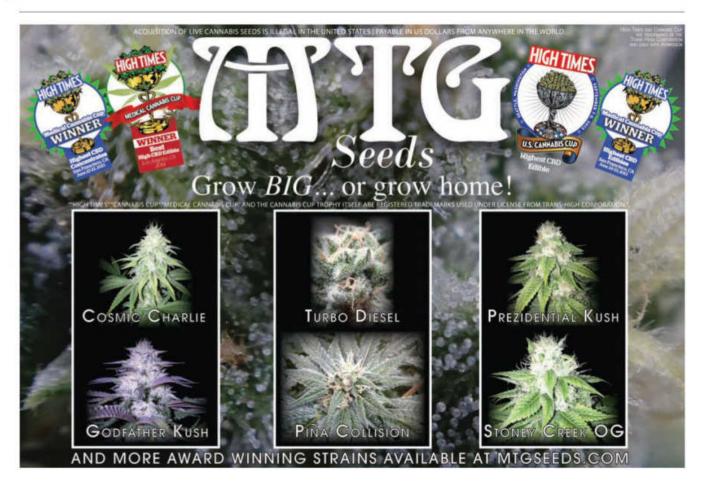
Craig of Talking Trees Farms manages four properties comprising 10 gardens tended by individual medical growers. The collective has hundreds of members and serves several dispensaries in the Bay Area. Because of the terrible drought, local government agencies have been given more leeway to investigate farms for diverting water or polluting the otherwise pristine region.

"I'm completely permitted—I'm as legal as I possibly can be," Craig says. "The Fish and Wildlife people have visited; the Water Board was here and took pictures. But I'll tell you, it really wasn't necessary. I don't grow the *wrong* way, and neither do the people who grow for Talking Trees."

In the late afternoon,

we drive up the side of a mountain in his dusty Dodge truck and park. A hundred yards away, one of Craig's gardens catches the last of the setting sun's rays. Like many of these rugged Triangle grows, it faces south for maximum sunlight. The plants undulate in the cool breezes, and their sparkly trichomes light up.

"This is the best," Craig says. He's not talking about the plants, though. He's talking about the life. \clubsuit



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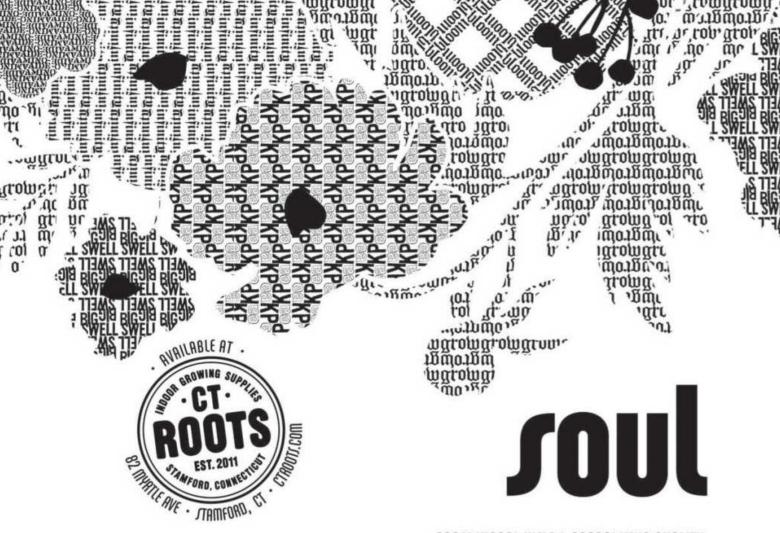
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OurLand, OurChoice

Native Americans plant the seeds of a new tribal cannabis industry. By Nic Easley & Adam Koh

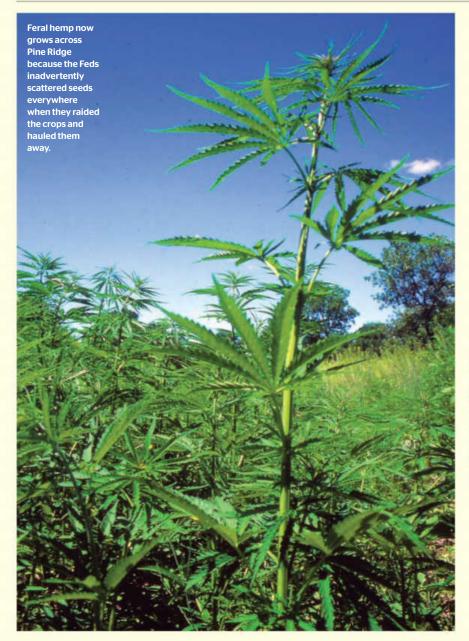
For three consecutive years, from 2000 to 2002, Alex White Plume of the Oglala Sioux Tribe planted hemp on his nation's reservation in South Dakota. Despite White Plume's conviction that the Oglala Sioux's sovereign authority to make their own laws—including one legalizing the cultivation of low-THC hemp on tribal land in 1998—would protect his crop, each year the DEA raided the property and destroyed his plants. White Plume appealed, but the Eighth US Circuit Court upheld the DEA's actions. To this day, he still has a federal injunction preventing him from growing hemp.

Over a decade later, a handful of Native Nations have begun to undertake such endeavors with hemp's high-THC sister, cannabis. Some have already seen their fledgling grows meet the same fate

as White Plume's. The difference now is that, in light of the cannabis legalization enacted by states like Colorado and Washington, the US government has announced that it will not attempt to enforce federal drug laws on tribal lands, provided that certain requirements are met. Yet despite this seemingly clear-cut provision, recent events have demonstrated the complexity and uncertainty that continue to exist when it comes to Native Americans growing and selling cannabis on tribal lands. In what follows, I will discuss the legal basis of tribes to pursue such activities, the status and fate of some of the first pioneers in the industry, and what the future might hold for Native Nations seeking to enter the budding hemp and cannabis markets.

Opening the Doors of Opportunity

On August 29, 2013, the US Department of Justice issued what has become known as the Cole memorandum, which indicated that the DOJ would not prosecute state-legal marijuana businesses violating the federal Controlled Substances Act, provided that the guidelines contained in the memo were observed and enforced. It must be noted that the Cole memo does not trump the CSA-in fact, it reaffirms the federal government's right to take action against cannabis operations at its discretion. In October of 2014, a subsequent Justice Department guidance, known as the Wilkinson memorandum, expressly made the Cole memo's enforcement priorities applicable in Indian country. This information was then made public on December 12, 2014,



High Times February 2016

complex legal circuits. In August, the Alturas and Pit River tribes, located in Modoc County, California, were raided, ending a massive grow operation that was just getting underway and destroying some 12,000 plants. In September, Mendocino County sheriff's deputies seized 382 marijuana plants from the Pinoleville Pomo, who had apparently decided to pursue their grow op despite earlier warnings from the department. While the Pinoleville Pomo have stated that they will dispute their case, the Alturas-Pit River operation was targeted as a likely source of interstate cannabis commerce by virtue of its size, in addition to receiving funding from a Canadian investor who had previously been convicted of trafficking cannabisboth of which are violations of the Cole memorandum.



"Our Hemp" by Lakota artist Lance Martin.

Moving Forward: Lessons Learned

While some tribes were conducting their ill-fated operations, others were meeting to plan and review their options. Numerous conferences and expos have been convened this year specifically to explore the possibilities of cannabis and hemp production by Native nations. Going forward, it appears that a tribal presence and the discussion of Native American issues will be staples at the many cannabis and hemp events catering to this exploding industry. Throughout the past year, numerous partnerships have been announced, although none has yet had a project come to fruition. It remains to be seen whether this first group of partnerships in the Native American cannabusiness realm will trip over the same hurdles that snagged the first tribes.

Acting on these considerations, the Flandreau Santee Sioux have gained the most traction and became the first Native group to formally legalize cannabis in a state (South Dakota) in which the plant remains completely illegal. The tribe's executive committee voted to legalize cannabis in June, and has since stayed

It's easy to see how these communities could become destinations for patients and adult-use consumers in "dry" states like Wisconsin and South Dakota.

sparking Native American interest in the cannabis industry in earnest.

However, not every tribe possesses the same legal status. The 566 federally registered tribes in the United States essentially constitute two groups. Some are subject to Congressional Public Law 280, which was enacted in 1953 to grant certain states criminal jurisdiction over Native Americans on reservations, among other stipulations. Others are considered sovereign nations possessing a government-to-government relationship with the US by virtue of treaties signed prior to 1871. These "treaty tribes" have the opportunity to determine the laws for their own lands as they so choose. This means that any treaty tribe, as well as those Public Law 280 tribes located in states where pot has been legalized, has the ability to enact its own pro-marijuana laws—provided that the guidelines of the Cole memo are observed and that local municipalities have not enacted a moratorium against cannabis.

However, recent events have highlighted the pitfalls faced by Native tribes that failed to properly navigate these





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in contact with state and local officials in an attempt to quell any concerns or potential conflicts. The Santee Sioux anticipate that their cannabis operation—including a lounge for various recreational activities—will be up and running by December of this year.

The Menominee, located near Keshena, Wisconsin, are another treaty tribe in a state in which no meaningful cannabis legalization has taken place. The Menominee are also proceeding cautiously: An advisory referendum was held in August, in which tribal members could express their opinion on the possibility of legalizing medical or adult-use cannabis. Tribal members voted in favor of both, and now the tribal council is discussing possibilities for the future. The Menominee have said that they will attempt to work with the US Attorney for their district in the hopes of preventing conflicts and misunderstandings.

A different approach was demonstrated recently by the Suquamish Tribe of Washington, which has the advantage of being located in a state where cannabis is fully legal. Instead of staking out their own territory and exercising tribal sovereignty, the Suquamish signed a compact with the state in September.



Solomon Red Bear, Sr., a Lakota spiritual leader, prays over seeds in the first Lakota planting.

The compact allows the tribe to operate a retail cannabis dispensary on its reservation and engage in commerce with other cannabusinesses in the state's licensed system. While the tribe is required to charge an equivalent of Washington's 37 percent sales tax to non-Native customers, it is free to do as it wishes with the money and has no financial obligation to the state.

The Flandreau Santee Sioux, Menominee and Suquamish have thus far demonstrated that a careful, methodical approach, combined with close contact with federal, state and local officials, are the requirements for laying a solid



Buddha

KRAKEN

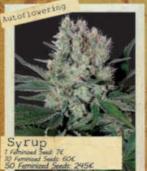
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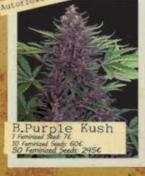
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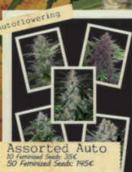


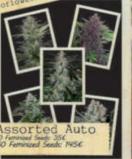




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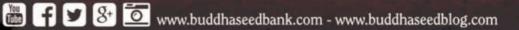
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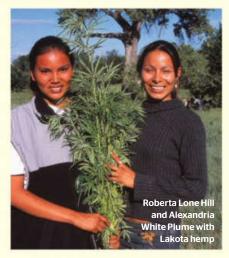
ACQUISITION OF LIVE CANNABIS SEEDS IS ILLEGAL IN THE UNITED STATES - PAYABLE IN US DOLLARS FROM ANYWHERE IN THE WORLD

foundation upon which a successful cannabusiness may be built. While all three undoubtedly have a great deal of complex legal wrangling ahead of them, these Native nations have marked out the successful first steps to be taken when venturing into this uncertain terrain.

The Future: Possibilities for Native American Cannabis and Hemp

While the development of a Native American cannabis and hemp industry is still in its early stages, it's easy to see how these communities could become destinations for patients and adult-use consumers in "dry" states like Wisconsin and South Dakota. For tribes in states that have some form of legalized cannabis, the ability to cultivate a lower-cost product by virtue of their exemption from state taxes can create a significant competitive advantage. Also, revenue from cannabis sales could bring much-needed dollars and employment opportunities into Native American communities, many of which suffer from serious impoverishment and related social ills.

Done responsibly, Native American tribes can create agricultural operations that will spur the development of tourism, gaming and other sources of



revenue, not to mention increasing the tribes' long-term cultural sustainability through food-security programs, as most reservations are located in food deserts. The economic development fostered by cannabis and associated industries can improve healthcare, education and housing on tribal lands. Well-paying jobs would also be created, helping alleviate unemployment, which is rampant on many reservations.

This industry brings the promise of hope to many, from individual medical cannabis patients to entire impoverished communities, and it can also instill young Native Americans with a sense of pride that their tribe is participating in something meaningful and relevant to them. As a result, this will be a big year to assess the opportunities available to Native Nations. Don't expect immediate results: At its heart, this is still an agricultural industry, tied to the seasons. But considering the traditional connection of Native American tribes to their land, no better industry exists for delivering opportunity and growth to those who need it there. The freedom of the treaty tribes to govern themselves also provides them with a unique opportunity to become regulatory innovators, addressing some of the negative environmental and public-health issues that the legal cannabis industry is facing.

Cannabis offers avenues that are ecologically sustainable and socially beneficial, in addition to being profitable. So keep an eye out next year for the progress that certain tribes have made, and for additional opportunities to proliferate as our knowledge and confidence grows along with acres of cannabis and hemp. *****

The authors own Comprehensive Cannabis Consulting. Visit: 3ccannabis.com





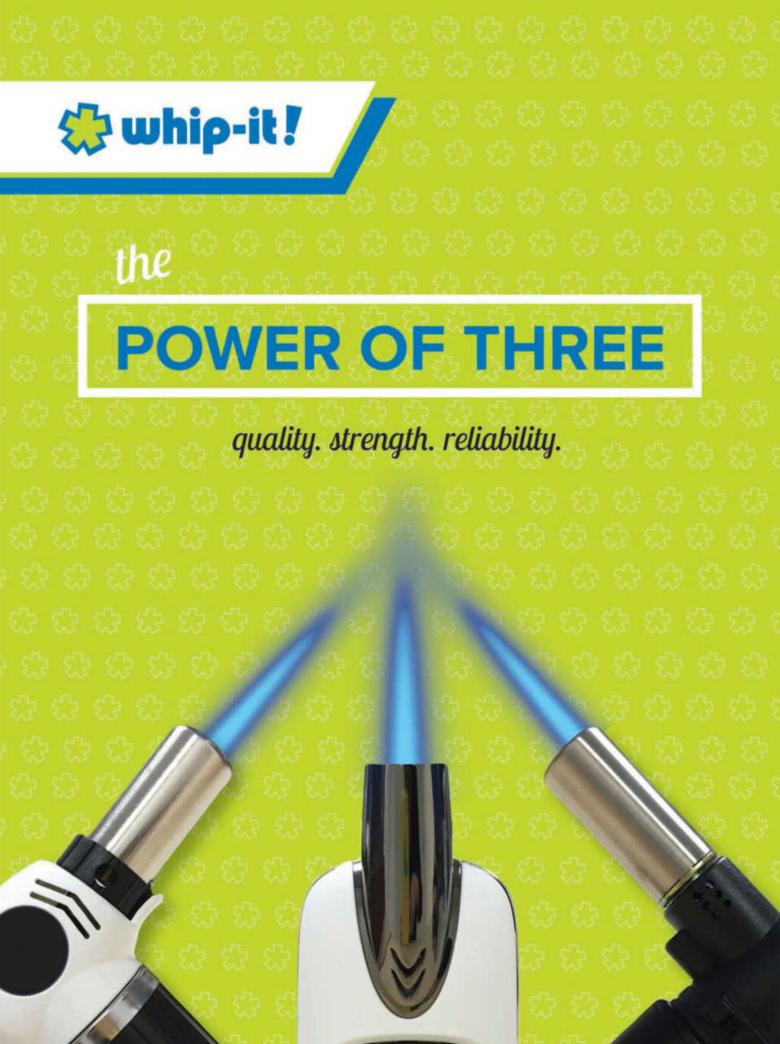
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Cannabis Manifesto

Steve DeAngelo is the founder of Harborside Health Center, the largest cannabis dispensary in the country, and author of *The Cannabis Manifesto*. With over four decades devoted to activism and advocacy, DeAngelo is an undisputed national leader in the cannabis reform movement

was fifteen years old, on the sands of a beach near Brownsville, Texas, traveling with a high-school group to Mexico. Dancing among bonfires of

partying spring breakers that night was a lithe and loquacious little man, proffering a brown paper shopping bag to the gathered groups of college kids.

When he reached the circle I was in, an older student sitting next to me pulled a little piece of cannabis out of the shopping bag. With a smile he put it to his lips and tasted it, then tossed it back in the bag.

"Sugar," the student explained to me after the dancing troll danced off with no sale. "They pour Coca-Cola on the weed to increase the weight."

KENT

I was shocked. It had never occurred to me that somebody would do such a despicable thing to such a wonderful plant. Coca-Cola is the least of it.

While cannabis itself is quite safe, it can be contaminated with substances that are dangerous. Common impurities include insects, insect eggs, insect feces, feathers, animal hair, animal feces, human hair, skin particles, and a wide variety of molds and fungi. Most of these impurities are relatively harmless though distasteful—but some are not safe for human consumption.

One pathogenic mold known as *Aspergillus* has sickened and even killed patients with compromised immune systems—and nobody knows how many

more minor respiratory infections it and other molds cause. Experienced and ethical growers never contaminate their own crop, but others with less talent or no scruples pump chemicals onto cannabis to boost yields or save pest-infected crops, including dangerous pesticides banned for human consumption. In the most extreme cases, illicit dealers have sprayed toxic substances on low-grade cannabis to mimic the crystalline appearance of higher-quality bud.

But because it's still illegal, in most places there are no safety standards or inspections for cannabis—so hundreds of millions of American consumers go without the basic health and safety protections in place for every other food and drug

99

since the turn of the last century.

The communities they live in are also left unprotected. Prohibition of such a widely used product has created a regulatory vacuum. No controls prevent the distribution of cannabis to minors, and the dealers they buy it from often introduce kids to truly dangerous drugs. Street sales migrate to the most vulnerable urban areas, the cost of law enforcement rises, and police are diverted from crimes of violence. Kids are left without parents and parents are left without careers, as minority communities bear the brunt of disparate enforcement, and hard-drug addicts who volunteer for treatment are put on waiting lists because all the spots are taken up by court-ordered cannabis

Cannabis can and

and distributed in a

way that is safe for

and communities.

both consumers

but prohibition

keeps that com-

out of reach.

monsense option

should be grown

Meanwhile, rural communities deal with everything from unwanted odors and poisoned streams to booby traps and armed shootouts

treatment.

Cannabis can and should be grown and distributed in a way that is safe for both consumers and communities, but prohibition keeps that commonsense option out of

reach. And ending criminal penalties is not enough—the experiences of Oakland, Los Angeles, Colorado, and Washington show that detailed rules must replace prohibition and fill the regulatory vacuum.

First-time visitors driving into Harborside turn into our well-patrolled parking lot a quarter mile from the freeway off-ramp in downtown Oakland. They are under immediate observation by safety staff and video cameras, but there's no razor wire or bulletproof glass. Our more nuanced approach combines biometric locks, alarms, and surveillance systems with a properly trained and generously staffed safety team. In eight years, we've served close to 220,000 patients and have not experienced one serious break-in or act of violence.

Nobody lacking legal authorization ever has or ever will be served at Harborside photo ID is inspected prior to entry, and doctor recommendations are double-verified. All the cannabis we sell is legally grown and has passed a three-step quality-control process. Products are labeled with their cannabinoid profile, in packages that are neither attractive nor accessible to children. One of eight licensed dispensaries in Oakland, we've created more than a hundred well-paying jobs and volunteered to pay a 5 percent sales tax that made Harborside the second-largest retail taxpayer in the city. The only arrest ever conducted on our premises was of an unauthorized person who became aggressive after being denied entry, and the overall crime rate in our immediate neighborhood has dropped to almost zero.

The City of Oakland and Harborside have proven that cannabis can be distributed in a way that protects its consumers and benefits the community. If we had a sane national policy toward cannabis, the federal government would send agents

> to study our good example. Instead, for decades the Feds have done all they can to twist reality and somehow make this harmless plant dangerous.

The dangers of the illicit market are the real threat—not cannabis itself. That's why protecting the safety and wellbeing of patients has been the core founding principle of the medical-cannabis movement since its very beginning.

In San Francisco, in the spring of 1996, when I first stepped into Dennis Peron's Market Street club, I felt like a time traveler to the future of my fondest imagination. Housed in a massive and once-elegant building constructed a few years after the great San Francisco earthquake, the Cannabis Buyers Club (CBC) featured three floors and 20,000 square feet of cannabis, in just about every variety imaginable.

The club was adorned with carpets and houseplants, political signs and bookshelves, mobiles, beaded curtains—even an aquarium. A wonderfully diverse collection of patients swirled about multiple weighing stations, lounging on couches, clustered at card tables playing board games, in completely unpredictable combinations of ethnicity and culture. Bags of weed—all grown under controlled conditions by friends of Dennis—were inspected and purchased, joints lit and passed, jokes told and laughed at, and a marvelous aroma of cannabis thoroughly permeated the jolly air.

Jolliness was in desperately short supply in San Francisco then. The city was reeling from the first wave of the AIDS epidemic, and the gay community had been decimated. Funerals and wakes replaced fabulous parties, and everybody knew somebody who was sick or dying.

When patients discovered that cannabis was effective for nausea, wasting syndrome, and neuropathic pain, medical use of cannabis increased markedly.

Weakened patients with compromised immune systems were forced to buy cannabis of unknown provenance in sometimes dangerous circumstances. Some patients couldn't find it at all; those who could had to pay high black-market prices, and nobody knew how it was being grown or handled until Dennis—a gay, pot-dealing Vietnam vet—took action.

San Francisco voters had already legalized medical cannabis, so local cops were forced to tolerate Dennis's boldness. But California Attorney General Dan Lungren was not bound by city law. He sent more than a hundred state narcotics officers to kick down the doors of the CBC and seize all the medicine and cash—along with confidential patient records.

A few months later California voters passed Proposition 215, which made medical cannabis legal statewide and directed the legislature to establish a state-supervised system for its cultivation and distribution. That never happened. Intense pressure from law-enforcement lobbyists blocked any form of regulation whatsoever. Medical cannabis remained legal under state law, but there was no official way for patients to get it. Local communities were left to untangle the mess on their own.

The East Bay, connected to San Francisco by the Bay Bridge, is home to the cities of Berkeley and Oakland. Unique in their differentness, both cities welcomed or at least tolerated—new "dispensaries" that opened to fill the gap left by the closure of the CBC. The earliest pioneers were activists who believed their actions would force the legislature to regulate, and they viewed their work more as civil disobedience than entrepreneurship.

The federal government could have chosen to exercise prosecutorial discretion and tolerate these well-meaning nonprofit efforts to help suffering patients. Instead, the Clinton administration very publicly went to war.

Drug czar Barry McCaffrey dismissed medical cannabis as a "Cheech and Chong show" and announced that the Feds would not respect state law. Then the director of National Institute on Drug Abuse—which itself had funded studies demonstrating the cancer-fighting properties of cannabis, and should have been well aware of other studies as far back as the East India DIAMOND SERIES LED

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102 The Cannabis Manifesto

Report—backed McCaffrey up with carefully parsed language: "There is not an existing body of scientific evidence to suggest that smoked marijuana is a viable, effective medication."

Attorney General Janet Reno threatened that federal resources would be reallocated to focus on California physicians who recommended cannabis, and the Department of Justice filed civil suits to close multiple dispensaries. Instead of accepting the judgment of the voters, the Clinton administration doubled down on the failed prohibitionist policies of the past.

The same time the Feds attacked medical marijuana, it was being undermined by a regulatory vacuum in pro-cannabis communities.

The activist dispensaries of the Bay Area hadn't set out to make money, but the legislature's failure to regulate made them the only alternatives to the illegal market, so patients flocked to their doors. Without even trying to, the pioneers began taking in millions of dollars per year in a still completely unregulated market. None of this was missed by people who prefer operating

in the shadows, and a new type of operator appeared, more motivated by profit than service or activism, and often coming from a background in pornography, gambling, or other gray-market scams.

In 2004, lawmakers passed a face-saving compromise that theoretically incorporated the provisions of Proposition 215 into the California Health and Safety Code, but they still refused to create a state-supervised system to provide for the needs of patients.

The legislature's ongoing failure to regulate encouraged more shady operators to enter the market. By 2004, well over a dozen dispensaries dominated the two blocks of downtown colloquially known as Oaksterdam.

Oakland had ambitions to redevelop the uptown neighborhood, and dozens of unregulated cannabis shops were not consistent with those plans. The situation came to a head when students at a charter school showed up with advertising leaflets from nearby pot shops—and the city government was caught in a political bind.

Popular support for medical cannabis was too strong to ban dispensaries

outright, but public outrage about the leaflets and other excesses made it impossible to ignore the situation. With no guidance forthcoming from the state, the only option left was local action. In 2005, Oakland became the first city in the U.S. to regulate the legal sale of cannabis.

Meanwhile, the Bush administration continued to terrorize growers and dispensaries. Over its eight-year term, it would conduct 260 raids and prosecute 84 individuals—at a cost of more than \$189 million.

Oakland's experiment was successful in spite of the federal pressure. Twelve of the fourteen dispensaries in Oaksterdam were closed, clearing the way for the

The Obama administration may have taken office with good intentions, but it ultimately proved unwilling to spend the political capital necessary to rein in an out-ofcontrol drug-war bureaucracy.

Fox Theater and further development of the neighborhood. One former dispensary was transformed into a gourmet restaurant, and ground was broken for an upscale condominium project. Complaints from neighbors and schools evaporated, and activist concerns about insufficient supply and access largely failed to materialize.

reopening of the historic

My business partner, dave wedding dress, and I were awarded one of the

four Oakland licenses. Since the federal government seemed determined to make cannabis dangerous, dress and I felt it was all the more important for us to keep it safe. One of the first things we wanted to do was provide patients with organically grown medicine, but the FDA refuses to grant organic certification for cannabis because it is illegal under federal law, and the agency can levy an \$11,000 fine for each and every sale of a product labeled "organic" without such certification. We couldn't take the risk—an FDA enforcement action could completely wipe us out.

We solved the dilemma by forming a partnership with a company already authorized to conduct organic certification. Working together, we developed a new program called Clean Green. It inspects cannabis gardens using the exact same standards as organic certifications but avoids the prohibited language.

Clean Green is just one of the tools we use to ensure the safety and quality of Harborside's products. Our processing center features tile floors and stainlesssteel work surfaces. All staff members wear protective gloves and hair coverings, and they sanitize their hands prior to entering the room. They are all trained and empowered to carefully examine each package and discard anything that doesn't meet strict quality-control standards. These precautions, coupled with lab testing, ensure that our products are always free from mold and other contaminants.

The Obama Administration

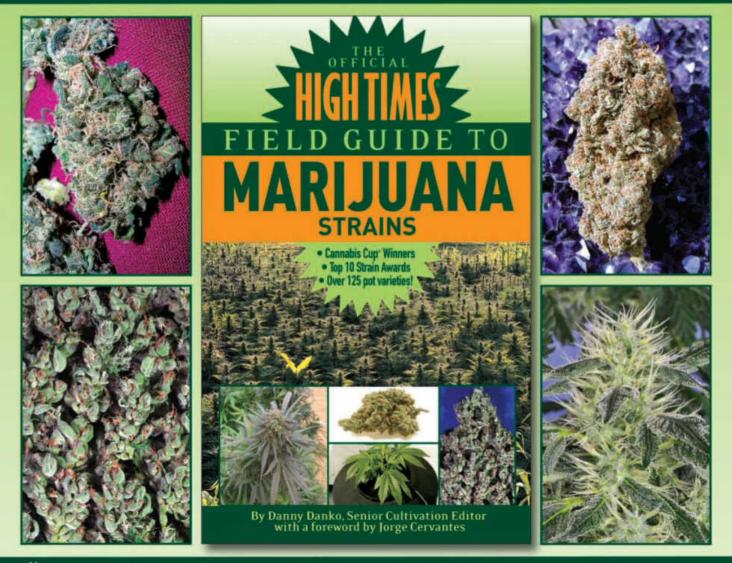
Barack Obama campaigned on a promise to end the raids against medical cannabis growers and dispensaries. In 2008 he said, "I think the basic concept of using medical marijuana for the same purposes and with the same controls as other drugs prescribed by doctors, I think that's entirely appropriate. I'm not going to be using Justice Department resources to try and circumvent state laws on this issue." That's why I and most other cannabis activists voted for Obama and donated to his campaign.

In the beginning of his first term we were hopeful. When Attorney General Eric Holder announced, "It will not be a priority to use federal resources to prosecute patients with serious illnesses or their caregivers who are complying with state laws on medical marijuana," activists across the country jumped up and cheered—he was talking about us! The accumulated weight of years of fear—of being raided, of being arrested, of being incarcerated, of losing my job—began to wear away.

Unfortunately, the new Department of Justice position was only advisory—U.S. Attorneys were still allowed to make their own prosecutorial decisions, and they continued to act against medical cannabis targets that were operating in full compliance with state law. In fact, as more states attempted to regulate cannabis, the raids picked up in pace and number.

Most were what we called "smash and grabs," or what the DEA refers to as "dynamic entry techniques." Heavily armed SWAT teams smashed down doors, terrorized patients, and seized all the money and cannabis they could find—but in most cases nobody was ever charged or prosecuted, and no judge ever examined the evidence.

The Obama administration may have taken office with good intentions, but it ultimately proved unwilling to spend the political capital necessary to rein in an out-of-control drug-war bureaucracy. By the summer of 2013, 270 raids had been conducted under the Obama administration at a cost of \$300 million—50 percent more than the Bush administration spent in its entire eight years. Most of that money was devoted to stopping local and "In this excellent field guide, Danny's years of experience translate into easy-to-reference information on more than 125 strains, all at the flip of a finger, condensing everything you need to know into an easy-to-read, well-researched, concise package—with great photos too!"—Jorge Cervantes, Author of Marijuana Horticulture: The Indoor/Outdoor Medical Grower's Bible



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In the places where the Feds succeeded in killing regulation, patients are still exposed to the dangers of the illegal market, communities continue to shoulder the

States that

have effectively

regulated cannabis

have already taken

billions of dollars

out of the hands

of criminals and

put them in the

licencees.

hands of taxpaying

burden of higher taxes, and law enforcement remains distracted from serious crime.

Cannabis is still contaminated, and no testing prevents it from reaching consumers.

Rural communities continue to be poisoned and trashed, while cartels and gangs are enriched and empowered. Patients denied access to medical cannabis are forced to rely on pharmaceuticals that sometimes kill them,

and an untold amount of suffering remains untreated—but nothing has made a dent in overall cannabis use.

The few states where U.S. Attorneys adopted a more reasonable approach to the state regulation of cannabis had a very different experience. Colorado is the most notable example.

The Most Potent

Kratom on

Earth

In 2010, Colorado's legislature became the first in the country to pass a comprehensive licensing program for medical-cannabis providers. The law imposed rigorous operating standards, screened potential licensees, and raised tens of mil-

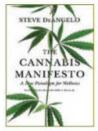
lions of dollars in fees. The unprecedented

program achieved its objectives admirably. Criminal organizations were flushed out by the licensing process, rigorous operating standards ended community complaints, and legitimization brought more professionals to the industry. Colorado voters of all persuasions were so impressed with the results they took the historic step of legalizing cannabis for

the use of all adults in the next general election—by a larger margin than President Obama received. A few hours later in Washington—one of the states forced to shelve its medical cannabis regulations voters joined them, overwhelmingly approving the legal cultivation and sale of cannabis to all adults. Today in Colorado, dozens of adult-use shops are generating tens of millions of dollars in extra tourism and tax revenue. Thousands of new jobs have been created, along with a real estate and construction boom. With more time to focus on real criminals, Denver police dropped the city's overall crime rate by 10 percent in the first five months after legalization.

The way forward is clear. States that have effectively regulated cannabis have already taken billions of dollars out of the hands of criminals and put them in the hands of taxpaying licensees. The same kind of consumer protections we have for all other products now apply to cannabis, and special regulations prevent its cultivation and distribution from becoming a public nuisance.

The experiments have been done, and the results are in. \clubsuit



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ARGARET CHO ALMOST DEFIES DESCRIPTION: BOTH ICON AND ICONOCLAST, SHE IS AN ARTIST, ACTIVIST, COMEDIAN, ACTOR, AND MUSICIAN WHO HAS BECOME A SORT OF PATRON SAINT FOR OUTSIDERS WITH HER NON-CONFORMIST, OFTEN CONTROVERSIAL VIEWS.

Cho began performing at age 16. Soon after starting her stand-up career, she won first prize in a contest to open for Jerry Seinfeld. She moved to Los Angeles in the early '90s and hit the college circuit, performing over 300 shows in two years. Arsenio Hall introduced her to late night audiences, Bob Hope put her on a prime time special, and Margaret Cho became a treasured national celebrity.

A STINT WITH THE SHORT-LIVED ALL-AMERI-CAN GIRL ON ABC SOON FOLLOWED. ALTHOUGH CHO WAS CHOSEN TO LEAD THE SITCOM BECAUSE SHE WAS A NON-CONFORMIST KOREAN AMERICAN WOMAN WITH LIBERAL VIEWS, THE BRASS SOON DECIDED THAT THEY WANTED HER TO "TONE HER ACT DOWN." DISHEARTENED AND TRAUMATIZED BY BEING CHALLENGED FOR SIM-PLY BEING HERSELF, CHO DEVELOPED A SERIOUS EATING DISORDER. DESPITE THAT DARK PERIOD OF SELF-ABUSE, CHO CONTINUED PERFORMING TO SOLD-OUT AUDIENCES ACROSS THE COUNTRY, CHANNELING HER ANGER INTO COMEDY, ENTER-TAINING BOTH MISFITS AND THE MAINSTREAM.

Cho's 1999 SMASH HIT ONE-WOMAN SHOW, *I'M THE ONE THAT I WANT*, WAS MADE INTO A BEST-SELLING BOOK AND FEATURE FILM. HER NEXT TOUR, *NOTORIOUS C.H.O.*, CULMI-NATED IN A SOLD-OUT CONCERT AT CARNEGIE HALL. SHE HAS SINCE CONTINUED TO PIO-NEER WHAT IT MEANS TO BE AN IRREVERENT, OUTRAGEOUS, UNAPOLOGETIC ACTIVIST AND ARTIST, BRANCHING OUT INTO VAUDEVILLIAN BURLESQUE, MUSIC, AND EVEN REALITY TV WITH HER VH1 SERIES, *THE CHO SHOW*. WE CAUGHT UP WITH THE BRILLIANT, BRAZEN AND HILARIOUS CHO BEFORE HER NEW SHOW AT THE BORGATA IN ATLANTIC CITY.



You've said that you're "green and sober."

I'm green and sober, which is not really true because I drink more than I should, but my goal is to just smoke pot.

That's what I was for a long time: I was actually completely sober for about 10 years-and, you know, I think sobriety is great, but I really want marijuana in my life. It really helps me. I don't think it's an addiction, I think it's a really positive thing—so "green and sober" sort of fits in with the ideal way I would like to live. [Laughs] When you can get to that pure state of just smoking pot, then that's really the best for you. I mean, alcohol, there's so many health issues that can come up with it. I was green and sober for a long time, so I'm trying to get back to that. That's my ideal state.

You've always been an advocate for marijuana use.

I wasn't necessarily when I was completely sober, but even then I always still missed pot, and I always thought that pot was never a problem. When you're in these recovery communities, the focus is on total abstinence, which I respect. But I realize, now that I'm out of that community, that marijuana really enhances my life. It's not a substance that is detrimental to my health or my wellbeing. It's a perfect celebratory thing; it's a perfect winding-down thing. You'll find that most comedians smoke pot. It's part of the profession, and so, in a sense, it's why I was drawn to comedy. I always loved marijuana, and I was drawn to comedy because everybody there was a stoner, and then I felt like I was completely with my family.

When did you first smoke pot?

My first encounter smoking pot was with—I think his name was Adam Leffert. He was very awkward, and he sort of liked me. We went out to an abandoned bridge out by my old high school, and we smoked, and I didn't really feel anything. It's true: The first time you smoke, you're not really sure what it is. You don't know how to identify the high.

Then later I returned to it, and I realized, "Oh, I really like this." I started doing stand-up, being around a lot of comedians who were stoners, and I realized it helped me. I have a lifelong battle with insomnia. Pot helped me go It was only after 9/11 where you really couldn't conceal anything—that changed the game a lot.

Did you ever get caught with it or get in trouble with the law?

No, miraculously, never. The only time I've ever had an altercation with the police for a drug-related thing was: I had a conversation with my tattoo artist, who had read an old manual that was, I think, memoirs of tattooists from around the turn of the century,



to sleep, and it helped me feel safe even when I was touring. On the road, it sort of helped me bring my home with me. So I had a little piece of my home—marijuana—everywhere I went, and I didn't feel so alone.

It was hard being out on the road at a very young age. I was 17, 18, 19 years old, and in these very sort of scary places, doing comedy and feeling very isolated. So pot really helped me through that whole thing.

How did you find weed when you were on the road?

Well, there was a time—this was a long time ago; this was in the late '80s, early '90s, when you could carry it with you—I usually would put it under my bra wire. I always carried weed through [airport security] and on planes, and it was never an issue. "Marijuana enhances my life. It's not a substance that is detrimental to my health or wellbeing. It's a perfect celebratory thing."

and there was a story about using cocaine as a numbing agent. So I gave him money, and he purchased a baggie of cocaine, and he mixed it into the wash water and tattoo ink, and he tattooed my back with it. And it actually helped me sit for longer, because I can't—I'm heavily tattooed, but I don't like sitting for tattoos for very long; I can only do an hour or so. But with the cocaine in my back, I was able to sit there for seven hours. I didn't feel high off of it at all, but it definitely took the swelling down and lessened the bleeding. And then I was driving home, and I got stopped at a sobriety checkpoint. And I was so paranoid because I had cocaine in my back skin. They were shining a light in my eyes, and I was like, "Um... I don't know what to do." I was just really freaked out and

paranoid. But that's the only altercation I've ever had with the law in regards to drugs.

Do you perform high?

I don't perform high, because I want to be entirely present for an audience. It's not that I'm *not* present when I'm high; it's just that I feel more of a sense of control if I don't have pot in my system.

Pot is for after. Pot is for my life. I'm definitely very creative with it; it's something that enhances my life and makes me notice things in a way that I would not necessarily do-so that's good. But in terms of performance, I think it's just kind of weird. Comedy is so... you have to have so much control over the audience, and they have to really understand you as being in control. That's what makes me want to be very sober. I mean, I'm not sure if it would necessarily affect mv performance–I've been a stoner for such a long time, I don't know if anybody can ever really tell I'm stoned.

What's your favorite way to get high?

Lately, I've been so drawn to dabs. I started to work with a company called Organi-Cann. They launched a whole series of different kinds of pot endorsed by celebrities and comedians. They brought over all of these different products of theirs to try, and they had a concentrate called the Lizz Tayler concentrate. Actually, Lizz Tayler herself-she's a beautiful young woman model-showed me how to use it. She gave me a rig... I was really intimidated by the blowtorch. But when I started to do it regularly, I realized that it actually was a very efficient way of ingesting. It's such a good delivery system, because you get so much THC, you don't have to inhale as much. I really found that dabbing was a new way to discover marijuana; I was so much higher than I could

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get by smoking flowers. Edibles, for me, are not necessarily the best delivery system.

Why is that?

You know, every formulation is different: Everybody cooks differently, and everybody extracts the THC differently, and so you don't have a very clear sense of the dosage.

What I will do, as a specialty cocktail at my house, is an absinthe/ marijuana hot toddy. It's like the Green Fairy—a green tea with absinthe, finished off with a lovely cannabis butter. It's quite a treat around Christmas.

Some people use marijuana medicinally. You use it recreationally.

I get high to get high. Some people do it to treat illness, which I think is really important—but I don't. [Laughs] It's 100 percent recreational for me, and if it does alleviate pain, that's a bonus. I respect and understand that a lot of people are in it for the health benefits, and that's a really interesting part of this whole movement that I don't know much about.

Your comedy is so raunchy and bawdy. What relationship does pot have to sex for you?

Pot puts me in touch with my body. It's something that helps you let go of inhibitions, but in a way that's safe, not in a way that's like you don't care what's happening to you. You can just really feel and enjoy what's happening to you; it's a great enhancement and a great aphrodisiac. It's something that puts vou at ease and transitions you from whatever is the real world to the

sensual world, which is all internal.

I think that marijuana is a very effective tool in dissolving all of the social constructs around sex. I would recommend pot for any kind of sexual encounter, or if you have issues in sexuality that pot might help you release.

"It's a long [show] title, but it encapsulates the weirdness of the world right now... It's a look at the world, and trying to find a place to go with my anger."

All of my experiences with sex and pot have always been positive—I really couldn't imagine sexuality without it. Why would you want to? If you have something that really works, you should utilize it. I think that people don't connect sexuality and pot as much as they should. And the best thing: marijuana lube!

Which one?

I used one that was sort of artisanal. small-batch. farm-to-table ... or farmto-bed. It was very new in its development, and I received a batch from a woman who was making all kinds of different things with pot. She gifted me with the lube, and I found it just phenomenal. It's so wonderful, especially if you like anal. It's a real enhancer, and it also eases any kind of the shock and sort of pain of penetration. I just can't say enough. I think that it could be a real help for somebody like myself

approaching menopause, where your body is not as amenable to invasion as it used to be.

Let's talk about your tour. What's happening in your comedy world right now? All new material.

The title of this show is There's No "I" in "Team," but There Is a "Cho" in "Psycho." It's a long title, but it encapsulates the weirdness of the world right now. Everything from all of the racial unrest-this difficulty with police brutality and how to deal with it, how to deal with it as a person of color, the difficulty of it in the sort of world that I'm seeing-and then also just crazy things like Rachel Dolezal and that kind of stuff, where it's like, "Why is this going on? How is this happening?"

It's a look at the world, and trying to find a place to go with my anger. I have a lot of rage about all of the violence against women. I have a lot of problems with the fact that Bill Cosby is not in prison. Why is he still out walking free? He raped so many women, and yet he won't be prosecuted because it's beyond the statute of limitations or whatever. As a rape victim myself, I understand what that does to you and what it feels like, and when you feel that powerless, you just... I don't know. It's so frustrating because we collectively feel it. It's so upsetting.

So this is part of what I'm talking about. I'm talking a lot about sexuality in general and bisexuality, which is my sort of approach to sexuality. There's stuff about people who I loved and lost, Robin Williams and Joan Rivers

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Why Marijuana Growing Education Is a Top Priority for Advanced Nutrients

The medical marijuana industry is growing every minute. Legal marijuana is the fastest-growing industry in the U.S. and a slew of other businesses are jumping on the bandwagon as well. At present, 23 U.S. states allow medical-marijuana use, while 7 have legislation pending to issue licenses for it.

4 states and Washington, D.C. have legalized cannabis outright, while another California referendum in 2016 will allow recreational use in a state that was the first to permit medical marijuana use way back in 1996. It is estimated that medical marijuana is already a multibillion-dollar industry (without counting recreational sales). While a great deal of information and misinformation appears daily on the internet, novices and more advanced growers alike are always looking for a source of reliable information which can serve to improve their yields, both in terms of quality and quantity. A whole community of growers inhabit the growers forums and are always looking to perfect their growing skills, without having to wade through hours and hours of irrelevant or misleading forum posts.

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in particular—who, I think, would not approve of any of this conversation, but she was just so important in my life. When you get to a certain age, you realize that your mentors die—and that sort of not being a child anymore, in a way, is a big part of the show. So it's many things.

I wanted to ask about your response to Robin Williams's death.

You know, it seems so... I'm about to talk about something sort of serious, but it seems so stupid because I took a bong hit before. [Laughing] No matter what, you just can't seem like you have any authority about a topic if you take a bong hit before because if you take a bong hit, it's like nobody's going to listen to anything you have to say.

I think it lends you an air of authority, actually.

Well, the whole story is, I was very, very upset about Robin Williams's death, and I kind of couldn't get over it. I talked to his best friend, who said, "Don't grieve Robin. Be Robin." And it really struck me, because Robin was a great advocate for homeless people. He created Comic Relief with Whoopi Goldberg and Billy Crystal, which was a series of benefits that raised over \$7 million for homeless people. He tried to improve the state of the homeless in America constantly. In his movie contracts, he had a clause that stipulated a certain percentage of the crew be homeless workers. He was invested in giving homeless people a way out. He really took care of a lot of people.

When he died, there was so much scandal about [his suicide], and people weren't remembering what a great humanitarian he was.

So I created #BeRobin to celebrate his work with the homeless, and also to celebrate his work as a street performer. I would go out on the street with a bunch of comics and musicians, and we'd perform for several hours, and people would come and bring food and clothing and money. We had a sign that said, "If you have, give. If you need, take." We did these events for over two months in San Francisco. We had hairdressers who donated their time; they would come down and cut people's hair. We had a little beauty salon happening, so you could watch the show and get food and clothes and some money and a haircut, and they were doing manicures and pedicures.

It was really a wonderful thing to just get in contact with homeless people of all ages, of all different races, every sort of person you could imagine. It was mindblowing, and it was a real celebration of Robin's work. Sometimes we would have boxes of stuff people donated, and there would be a big fat bud in there. People were actually giving marijuana. The pot was always very, very, very fast to go.

What's next for you?

I have a couple of very exciting things going on. I've sort of switched over into the role of producer: I have a production company called Animal Family, and it's all television shows that are. for me, important to make. I've gotten to a place in my career where I'm able to create entertainment that includes me sometimes, but also is just what I would want to see. I've been in television for about 30 years, so I have a good sense of what will work, and I'm applying that finally. I'm going to do some programming that I can't mention yet, but that I think this magazine will be covering a lot. We'll see. 💥

Check out video of the interview with Margaret Cho at hightimes.com/margaret-cho.



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High Times

Speedway to Success

The tech-savvy entrepreneurs of MJ Freeway bring computing power to the table. By Mike DiPaola



eed is a natural product, but as the center of a fast-growing industry, it takes unnaturally smart technology to keep it moving. Tech entrepreneurs Jessica Billingsley and Amy Poinsett recognized this need in 2010 when they co-founded MJ Freeway, a software company that helps cannabusinesses track their products from seed to sale, keep up with compliance regs, and-most recently-manage transactions without handling cash.

MJ Freeway's reach is impressive. Its software is used in all 23 US states that allow such things, as well as farther afield in Canada, Spain and Australia. The company also has a Latin American presence, but Billingsley and Poinsett won't tell us where. "We like to just sav 'South America," Billingsley offers. "We are being a little bit cagey because we don't want our competitors to know what we're up to."

By now, the competition is well aware that MJ Freeway is moving up the food chain fast. It was recently recognized on the Inc. 5,000 list of fastest-growing companies in the US, and Billingsley was named as one of Fortune magazine's "Most Promising Women Entrepreneurs" of 2015-the first woman from the marijuana industry to score the prestigious award.

"One of the challenges we always face is in getting to know the regulatory and market cultures," Poinsett says. Example: East Coast canna-markets can be like exclusive country clubs (in Connecticut, marijuana producers need to pony up \$2 million in escrow just to get started). "The West Coast is more open to all, so you'll find more mom-and-pop businesses."

MJ Freeway not only stays on top of the regulations in every state where cannabis is now legal; it's also gearing up for the dank dominoes that will fall elsewhere.

"We have a person whose role is to pay attention to states and countries where cannabis laws and policies are changing," Poinsett says. "We really try to stay ahead of the eight-ball with new policy."



MJ Freeway not only stays on top of the regulations in every state where cannabis is now legal; it's also gearing up for the dank dominoes that will fall elsewhere.

As a result, MJ Freeway is ready to hit the ground running in the next states thought likely to loosen their pot laws (looking at you, Illinois, Nevada, Maryland...).

Tracking plants from seed to sale is required for many ganja businesses. Now the software gurus are teaming up with the money-management firm Jane to address one of the more prickly problems facing the industry: handling all that cash. The partnership has begun placing cashless kiosks in dispensaries and other weed retailers to manage point-of-sale purchases and keep precise records. It won't solve every fiduciary issue, but

it will take a lot of the physical money handling out of an essentially cash-only business. "You can think of it as a reverse ATM," Poinsett notes.

The MJ Freeway partners are well aware of their importance as women leaders. "We are involved in STEM," says Billingsley, referring to the fields of science, technology, engineering and math, which have traditionally been dominated by men. "For us to be role models for girls is very important-especially for me, as I have an 8-year-old daughter."

One more important point they'd like to make: "We're hiring!" 🖗

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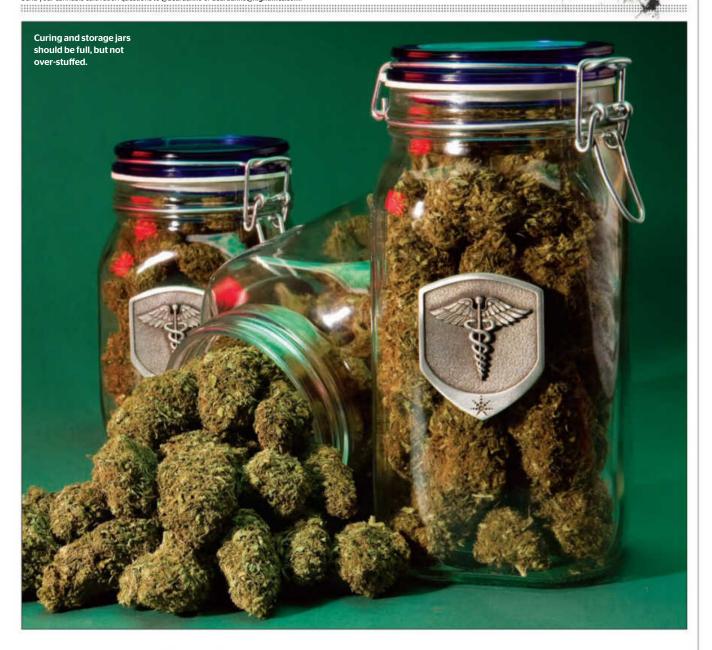
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SUBJECT: Jar Full FROM: 420Animal

- 🝋 l just harvested a week ago, and my buds are ready for curing. My question is: How much is too much when loading the jars?
- Dear 420Animal,

SEA KENT

In the curing stage, your glass jars

should be full but not stuffed to overflowing. That means there should be plenty of air in the jar, so don't press the buds down to get more inside. Basically, you don't want to crush them and damage the trichomes, so gently fill your jars with buds and don't cram more in than will fit comfortably.

Also remember to "burp" the jars on

a daily basis to let out any accumulated moisture. The slow release of liquid to the air and the replacement of moist air with regular air is the curing process in a nutshell. If you smell anything that resembles ammonia coming out of the jars, leave them open until the odor subsides and the buds don't feel damp anymore.

Danko Tip: Any brown or yellow leaves should be removed from your plants to prevent pests and mold.

SUBJECT: Light Deprivation FROM: Grower on the Mountain

I keep hearing the term "light dep," but I'm not sure what it means. My buddy says it helps you harvest faster and that lots of people are starting to set up this way. Can you elaborate on exactly how this works, please?

Dear Grower,

Light deprivation (a.k.a. "light dep") is a technique in greenhouse growing in which an opaque (dark-colored) tarp is pulled over the greenhouse in order to limit the amount of light allowed in to 12 hours per day. This way, growers are able to begin the flowering process whenever they wish and avoid problems with law enforcement, plant rippers and the typical humidity issues that arise during the fall.

It can also work the other way around, when growers add supplemental lighting to their greenhouses in late winter and early spring to keep the plants from flowering and allow them to build up a bigger root system, producing more vegetative growth and, thus, bigger yields down the road.

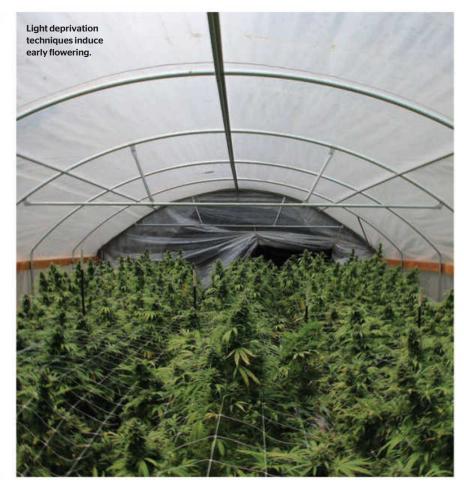
SUBJECT: Sensi Storage FROM: Sandra

Many thanks for all the great information you provide. As a seasoned smoker and newbie grower, I've learned a lot. You've already answered many of my questions, but I haven't seen one that addresses storage yet. (Forgive me if I've simply missed it.)

So here it is: I had to move away from home for a year because of work. My mother sent me a care package that I've kept double-bagged in the deep freezer for safety, smell and preservation. What's the best way to store a large amount that you can't have out in the open? Thanks again, eh! Much love from Canada.

Dear Sandra,

I don't recommend storing marijuana in a refrigerator or freezer for either the short or long term: Fridges have too many fluctuations in their humidity level, and freezers can cause damage to delicate trichomes and decrease the potency of your bud. You're much better



off keeping your cannabis stored in sealed, opaque glass jars in a cool, dark place, such as a closet or cupboard.

SUBJECT: What's the Cure?

FROM: Mateusz

I've been growing indoor strains a few times and curing the buds in different ways. Every time I read about how to cure my harvest properly, I see something like: "and then put it in glass jars and open them twice a day." I've been following the rules so far, but why is it always a glass jar? Is it okay to keep buds in plastic containers or coffee cans like those from Lavazza?

Dear Mateusz,

The reason we cure in glass jars is because they won't impart any unwanted flavors to your buds. Plastic containers and coffee cans can change the taste of your buds and make them unpleasant to smoke. Also, they may not be airtight, which can cause buds to dry out far too quickly. I always recommend using jars with opaque glass (not clear ones that you can see through) and keeping them stored in a cool, dark place. Also, only open the jars if moisture has built up in them.

SUBJECT: Transplantation Explanation

What's your recommendation for how many times to transplant a plant into a new and larger pot or bag?

Dear Dan,

Honestly, my opinion is that you should grow your plant in one large container throughout its life cycle. Every time you transplant from a smaller container to a larger one, you risk doing damage to the roots. Even when done properly, the plant still needs about a week or so to recover and start growing roots into the new soil.

I also believe that when a plant becomes root-bound, the roots signal the plant to slow its growth due to the lack



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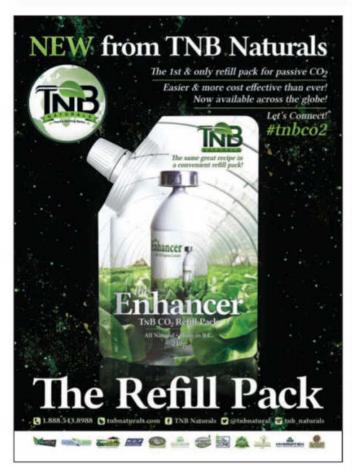
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122 Dear Danko

High Times February 2016

Danko Tip: Rooting clones requires warm temperatures and high humidity, so use a heat mat and place a clear plastic dome over your tray.



of space. This results in smaller plants and diminished yields. When the taproot has plenty of room to grow and the rest of the roots are expanding, the plant above will respond with vigorous growth. For these reasons, I suggest planting seedlings or clones directly into the same container that you will harvest from at the end of the flowering stage.

SUBJECT: **Seeds and Fems** FROM: **J**

Greetings! Out of a pack of six feminized Sour Tangie seeds from Reserva Privada, I was blessed to find one really nice phenotype. It's an indica-dominant pheno that's loaded with resin and finishes in less than 50 days. It hasn't proved to be a great yielder, but I'm learning to dial it in, and my latest harvest was the heaviest so far. I like the strain a lot and want to keep it around for a while.

As I learn more about cultivation, I'm finding that it's generally recommended to use regular seeds when starting a mother plant. What are the reasons for this? I know one reason is that plants from feminized seeds have more likelihood of showing hermaphroditism down the line. I'd imagine that's because, by taking male genes out of the equation, you're forcing the plant's reproductive biology to make a decision: go hermie or go extinct. But when you grow regular seeds and remove all the males and keep a female plant going for an extended period through cloning, aren't you doing essentially the same thing? If so, why don't those plants have just as much chance of going hermie?

Dear J,

It's usually not recommended to start a mother plant from feminized seeds due to the problems you've mentioned: Because of the way the seeds are produced, the plants do have a tendency to go hermie more than ones grown from regular seeds.

People use feminized seeds to avoid growing out any males. This convenience comes with a caveat: Some of the plants can turn out to be hermaphrodites due to their genetics. Plants grown from regular seeds can also be hermies, but it's far less likely and is typically due to stress, such as light leaks or major fluctuations in their environment.

Regular seeds from a reputable breeder will be F1 hybrids. These plants exhibit hybrid vigor: a tendency to grow stronger

2



Tumbling bud in round cylindrical devices destroys trichomes. It will trim wet bud but we don't condone that. Your product should hang and cure for at least 10 to 14 days. The way it's been done for thousands of years. [Fans help in this day and age] Scissors used to be the only way to trim dry bud with out destroying trichomes. It is very time consuming. Ergo a true set of mechanical scissors for dry bud, but better - scissors don't cut when they spring back. Ultra Trimmer cuts both ways and doesn't stop until you turn it off. Our trimmers are SO effective, the biggest names in the Concentrate industry will ONLY use the "sugar shake" from the UltraTrimmer because it yields the same as hand scissor trimmed bud. Other machines simply don't yield enough to matter. With its slow moving parts (NO VIBRATION) it simply snips the bud, [ADJUSTABLE SPEED] at 232 snips per revolution and many buds at a time. Once the bud has been snipped it will not snip any more bud material until the bud is moved. The Ultra Trimmer can trim 4 ounces in 5 minutes - without destroying trichomes! We make larger devices as well. These larger devices are custom made to order and can handle processing 12-18 Ibs per HOUR! The LAST trimmer you'll buy!

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124 Dear Danko

High Times February 2016

Danko Tip: Plants that are placed on cold floors will grow more slowly than those raised above ground level.

than their parents in the first filial generation. This makes mother plants grown from regular seeds far more desirable than those grown from feminized seeds, which are produced by "selfing" and backcrossing: Because of their strong genetics, plants grown from regular seeds have much less chance of turning out to be hermaphrodites.

That being said, it's not inevitable that your Sour Tangie mother plant will produce clones that herm out on you. If they do, you'll have to get rid of the mom and start over with regular seeds. If they don't, you got lucky and can continue to take clones. Just remember that feminized seeds are produced for the purpose of growing out once, not for starting mother plants.



SUBJECT: Sugar Leaves FROM: Lucy P.

We grew a really nice crop this year, and after harvest and trimming, we were left with a decent amount of shade leaves and trim. A close look at the leaves reveals many trichomes. It would be a shame to waste all of these resin glands, and I've heard that you can make hash from them using ice water. Can you please let us know our options?

Dear Lucy,

Fars

Since 1994

There are several things you can do with your sugar leaves. One of the simplest is making dry-sift hash, which is easy to produce, melts well and tastes amazing when free of impurities. (See Bubbleman's article on page 63 for info on making this type of extraction.)

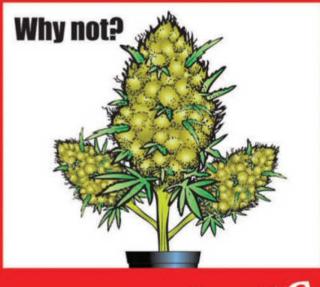
You can also use ice water, filter bags and a bucket to make ice-water-extracted hash (a.k.a. bubble hash or ice wax). The key to creating quality hash this way is to dry the product properly to get all of the moisture out.

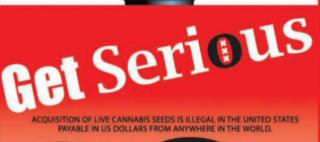
I'm not going to suggest using butane or another explosive solvent to extract your trichomes, because this is a dangerous process. Only experts in chemical extraction should attempt to make BHO or butane hash oil. Too many amateurs are blowing themselves and their houses up for me to recommend this to just anyone.

The final thing you can do is to make canna-oil or cannabutter for cooking. Once you've heated the leaves in butter or oil for a while, you can use it to create a wide variety of edibles, both sweet and savory. Just remember that edibles take up to an hour to kick in, so be sure to eat a little bit at a time. $\frac{1}{2}$

not so serious

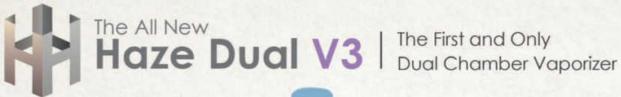
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t 19, Ciara Schuman decided to forgo college and undertake her education according to her own terms. "I traveled to Northern California last year in search of new experiences," she savs.

She soon found work as a trimmer on a medical marijuana farm in central California. It was a natural fit for her: "I had started using marijuana recreationally, because I found it enhanced my imagination and inspired my creativity. But I've found it also helped me develop a sense of introspection. More recently, I've benefitted from the use of cannabis as an alternative to standardized medicine."

Following harvest, Schuman headed down to Puerto Rico, where she earned a master's certificate from

the Professional Association of Diving Instructors (PADI). But she was still intent on learning the full process of cultivating marijuana.

This past year, Ciara was back in the garden again. "From cracking seeds to amending the soil, from carrying hoses to top-dressing, the workdays are long," she says. "But the rewards of caring for a seed from its planting and watching it transition have been amazing. I've developed a greater connection to the environment and the world in which we live. Learning the benefits of sustainable farming has broadened my perspective and given me a skill set that will last a lifetime.

"Marijuana continues to enhance my life and teach me more about myself," she adds. "I love this plant!" 🖗

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128 Ask Dr. Mitch

Canna-Facts Empathy, dabs, hair tests and underage tokers.

Got a question for Dr. Mitch? Email him at 420research@gmail.com.

Sometimes cannabis really helps me relate to people, but sometimes it doesn't. What's the deal? *Luna M. Path*

Hi Luna,

The ability to recognize other people's emotions can get better with CBD, a shade worse with THC, and may not change at all when they're combined. A high-CBD strain might make you a stellar reader of feelings. Other strains might have no impact.

I feel like dabs are all over the media but without any warnings. Prohibitionists are going to go ape! Can't we do something? *Worried*

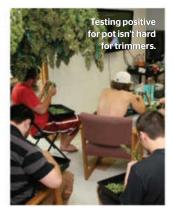
Hi Worried,

You're right about the media coverage and the lack of explanation. A recent study found over 100 YouTube videos on dabs; barely one in five offered any sort of cautions. Dabs are hardly as dangerous as a car or a kitchen knife, but they can certainly surprise the uninitiated.

Can I test positive just from being a budtender? I'm on probation but I really need the work.

Nimble Withclips

Hello Nimble, Assuming you can sit around pounds of plants with other tenders and not light one up, you could still fail a hair test. Recent data indicate that folks who simply rolled one joint per day for five days ended up



Recent data indicate that folks who simply rolled one joint per day for five days ended up with positive hair tests.

with positive hair tests, even though their urine screens were clean. Apparently, plant particles can make their way to the scalp even if they're not actually in your body.

What's the deal with young kids disapproving of marijuana more? Brittany Houston

Hi Brittany,

New surveys show that the percentage of 12-to-14-yearolds who strongly disapprove of someone their age trying marijuana increased from 74.4 to 78.9 percent, which is fine with me. Only medical users in that age group should consume the plant. Let's keep getting the word out. \leq

Dr. Mitch Earleywine is a professor of psychology at SUNY Albany and the author of Understanding Marijuana and The Parents' Guide to Marijuana.

IAN SKYI







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So You Want to Be an Extract Artist

How to begin a career in the field of cannabis concentrates. *By Craig Coffey*

he extracts market is growing up. In less than a decade, it's gone from open blasting in backyards to large-scale production facilities producing high-quality concentrates for an emerging legal marketplace.

The state-of-

the-art equipment used to produce these concentrates is expensive, complex and, in the hands of unskilled technicians, very dangerous to operate. So, if you want a career as a commercial extraction technician, how do you get started?

It's not like there are trade schools that teach you how to safely

blast weed into hash—and, at this point in the game, we wouldn't recommend that anyone attempt to gain experience by open blasting at home. That sort of activity is just too dangerous to endorse and besides, the commercial dab industry is based on closed-loop systems, which means that open blasting at home isn't going to provide useful experience.

If you're thinking about a career in the extraction field, getting an education is the best place to start. You should begin by learning everything you can about industrial chemistry, including the materials that you'll be working with as well as proper laboratory procedures.

As an extraction tech, you'll be responsible for running passive and/or active closed-loop extraction machines. A closed-loop system means that all of the butane used for extraction is recaptured instead of being released into the atmosphere: The gas is passed through the cannabis sample, evaporated and collected, all in one closed loop. A passive system uses temperature differentials to move the butane around the loop; an active system uses

We wouldn't recommend that anyone attempt to gain experience by open blasting at home.



Closed loop systems are the industry standard.

fied classes that will teach you how to become a professional technician handling closedloop extraction machines. However, most manufacturers of such systems in regulated cannabis states are extremely helpful in training and supporting extraction professionals; some even offer hands-on courses. We recommend working toward an apprenticeship that can lead to hands-on experience in an actual hash-oil production laboratory. Get your foot in the door by sweeping floors if you have to, and then soak up every bit of knowledge that you can from the techs operating the equipment.

Remember, you can't become an extract artist overnight. This is a craft that requires dedication and a great deal of patience. You have to be in it for the long haul. ¥

a vacuum and air compression to do the same. If all this sounds complex. that's because it is. Butane in a closed system under pressure and heat can create an extremely dangerous situation. And in an industrial system, we aren't talking about a few cans of butane-we're talking about gallons.

At present, we are unaware of any actual certi-

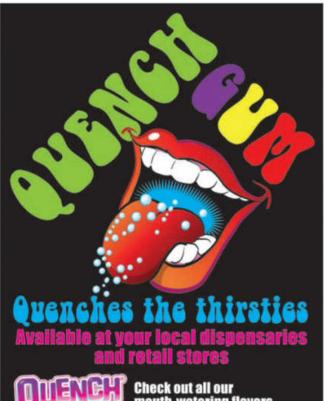


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132 Almost Infamous by @BobbyBlack



Burn One For Bernie Getting fired up for Senator Sanders in New York City.

follow politics the way most guys follow sports: For me, presidential debates are like the playoffs, and Election Day is like the Super Bowl. I've voted in every election since I turned 18, but in all those years, Barack Obama was the only candidate to actually inspire me-until now. And while Obama has partly delivered on his promises of "hope

Vermont

putting an end to institutional racism and income inequality, combating climate change, reforming the criminal-justice system, promoting campaign-finance reform, and providing universal health care. Stressing the need for unity and grassroots involvement, Bernie ended with a call to action: "The only way we transform this country is when millions of people



get actively involved in a political revolution. Welcome to the revolution!"

After the speech, I headed to a Sanders rally and joined the volunteers waiting to greet the

Bernie Sanders, however, is a whole different matter. Not only is he the most progressive, honest and compassionate candidate we've ever seen in my lifetime, he also accepts zero money from Super-PACs, Wall Street or any of the nefarious billionaire puppet masters; all of his campaign funds are raised via individual donations by average people. Which is why, for the first time in my life, I've donated to a political campaigntwice: first in May 2015, after Sanders announced his candidacy. and the second time for a ticket to his fundraiser in New York City on September 18. Appropriately, the sold-out

speaking engagement was held at Town Hall in midtown Manhattan. After a brief introduction from actor/activist Mark Ruffalo, the progressive powerhouse charged onstage to the tune of Neil Young's "Rockin' in the Free World," bringing his family out for a quick wave before getting underway. Sanders spoke for just under an hour-cracking jokes about the three-hour Republican debate on CNN earlier that week, but getting serious about his signature issues:

senator upon his arrival at the Ed Sullivan Theater, where he was appearing on The Late Show with Stephen Colbert. After a half-hour of canvassing (and some sly hits on my vape pen), I was taken into the theater by my buddy Jason, Colbert's Emmy Award-winning video editor, where I got to watch Bernie's interview live from the upper balcony. Much like the earlier assembly, the crowd greeted him with chants of "Ber-nie! Bernie!," prompting Colbert to quip: "You know, generally speaking, they chant my name, senator." On the show, Sanders repeated his call to action and slammed Donald Trump for pandering to people's basest fears.

There's no question in my mind that I'll not only be voting for Bernie Sanders, but campaigning for him as well. If you're not familiar with his platform, I urge you to check him out-he's the real deal. 💥

To watch Bernie's Town Hall speech and his interview on The Late Show, go to hightimes.com/ almostinfamous.



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Blue-Ribbon Buds State fairs may be the next venues for recognizing top-notch cannabis.

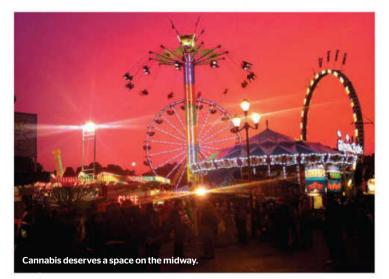
Allen St. Pierre is executive director of NORML. Visit **norml.org**.

h, state fairs. The fried-everything food, the smell of hay and farm animals, the amusement rides and blue-ribbon awards for the best produce. And that includes ganja—coming soon to a state fair near you.

Think I'm kidding? Cannabis cultivators in some of the places where the sacred herb has either been legalized (Alaska, Colorado, Oregon and Washington State) or depenalized (Washington, DC) want the opportunity

to display their produce and compete for blue ribbons at the state fair. After all, why should cannabis consumers be treated any differently than wine and beer fans who enjoy the same type of competitions for a highly prized local product?

This past summer, cultivators and marijuana-law reform activists in Oregon and Washington, DC, sought to establish a precedent for including ganja plants at their respective fairs. In Oregon, officials wouldn't allow live plants to be displayed



at this past summer's fair, citing the fact that full legalization and retail sales had not yet commenced. However, in the spirit of cooperation, fair organizers indicated that they'd revisit the policy in advance of next year's event (and they did allow an information booth at this summer's fair).

But at Washington, DC's fair, a few miles from the US Capitol and DEA headquarters, a blue-ribbon contest was held featuring locally grown (and 100 percent legal) marijuana plants. Sixty cannabis cultivators entered the competition, and local judges examined, smelled and otherwise assessed the plants—without, however, sampling the entries, because some were submitted from states where public use is still currently prohibited. Nevertheless, the blue ribbon for Best Bud went to Kenneth Gore for his Capital Chronic OG.

Like many people, I enjoy the hustle and bustle of a state fair. As I've grown older, I've also come to appreciate the fine cuisine—fried Snickers, for example—as well as the

beer gardens and wine tastings.

After expected pro-legalization ballot initiatives are placed before voters in California, Nevada, Arizona, Missouri, Michigan, Ohio, Massachusetts and Maine in 2016, many more state fairs will likely feature cannabis-cultivation contests. It's also very probable that with the increased production of industrial hemp, farmers and trade associations will demand a Best of Breed blue ribbon alongside peaches, watermelons and corn.

And that would be just peachy! 🖗

By Kevin Mahmalji, NORML national outreach coordinator

FREEDOM FIGHTER

Never Still

Energetic Sabria Still of Maryland battles to end prohibition.

Like all of us, Sabria Still believes the federal government's war on cannabis is a violation of our basic human rights. Understandably, her desire to educate people about the origins of pot prohibition—and the need to free the weed—has never been stronger.

Sabria is a longtime humanrights activist from Maryland. After Maryland NORML was revitalized in late 2014, she seized the opportunity to learn more about policy making and the legislative process.

Once she became involved, Sabria was assigned the task of establishing and leading a Montgomery County chapter for monthly meetings and outreach activities. Her affiliation with NORML enabled Sabria to connect with her congressional representatives and ultimately meet face to face with them on Capitol Hill.



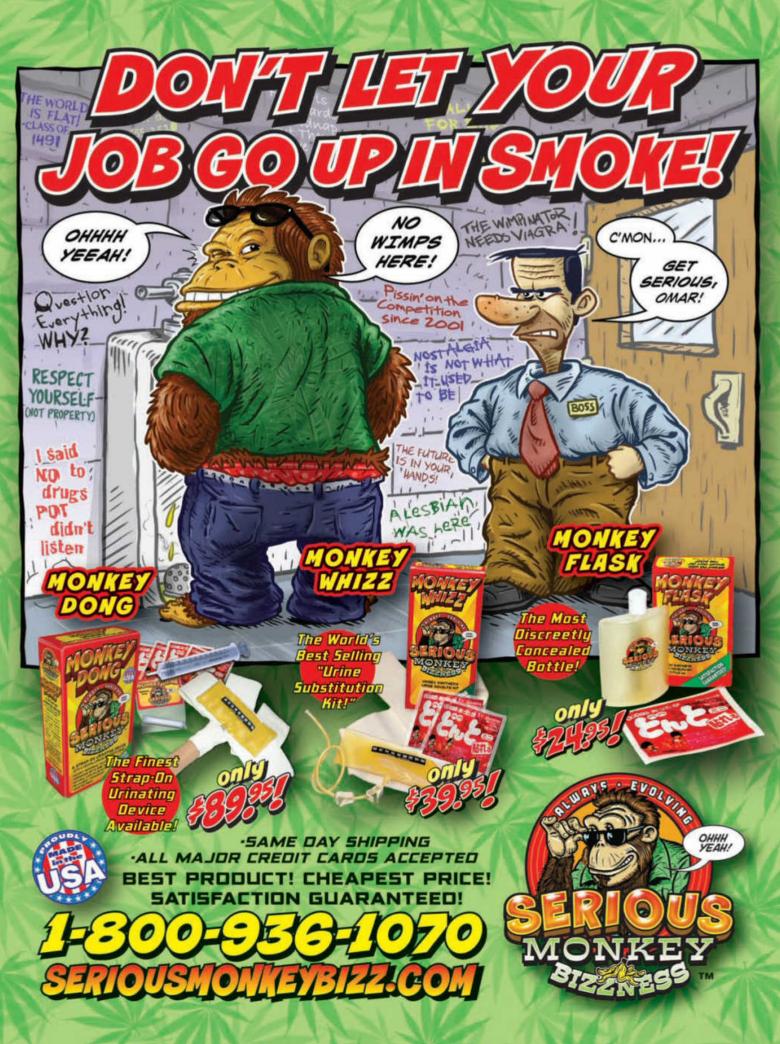
lawmakers considered medical marijuana regulations, Sabria testified on behalf of Maryland's patients as part of the Natalie M. LaPrade Maryland Medical Cannabis Commission. Over the past year, she's continued to spread awareness and encourage dialogue between residents and their representatives by appearing on local radio shows and leading community discussions. Sabria also helped make the second

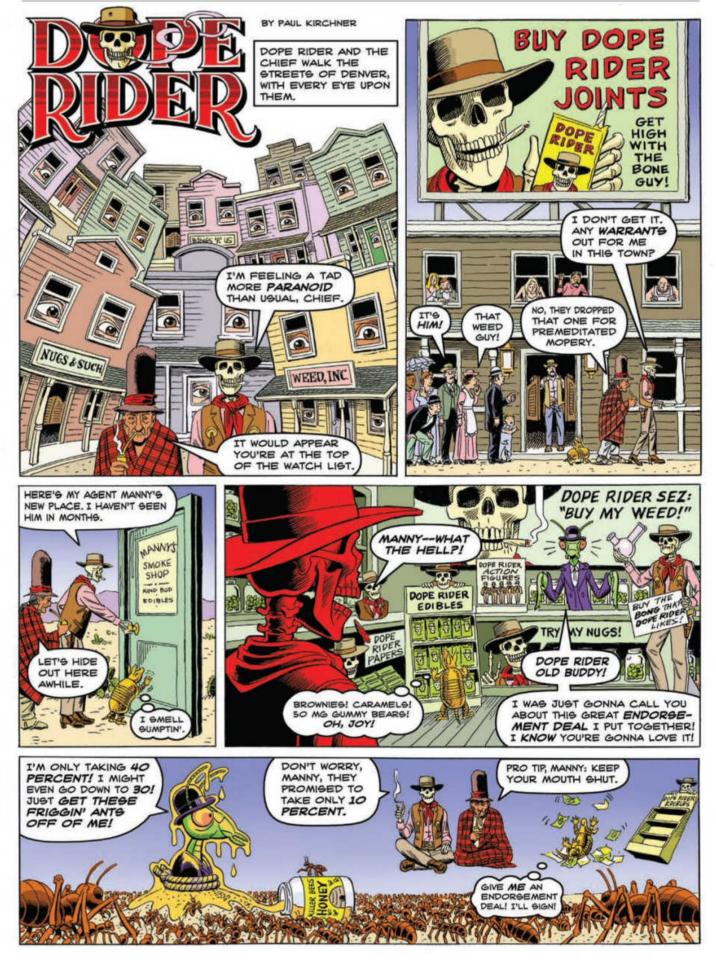
When Maryland

annual DC-MD-VA Cannabis Coalition Vanguard Awards a smashing success.

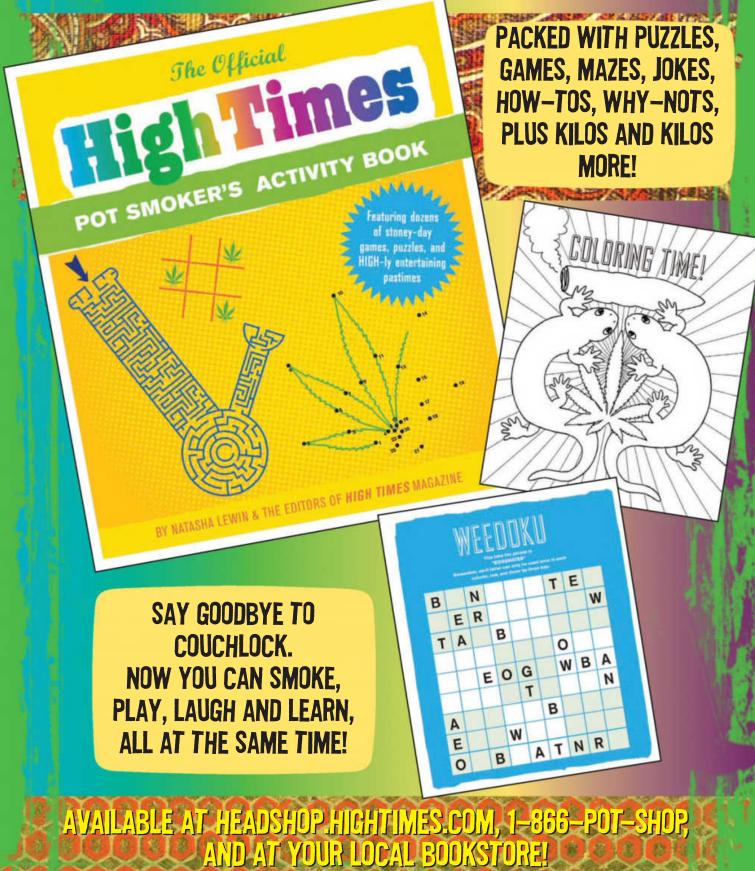
She looks forward to achieving the ultimate goal: legalizing access to medical marijuana in her home state. When that time comes, Sabria intends to make promoting scientific literacy about the endocannabinoid system and cannabinoid deficiencies the centerpiece of her planned dispensary.

"This era knows the truth," Sabria says confidently. "And we will stop at nothing to achieve world peace."





WHAT TO DO WHEN YOU'RE STONED!



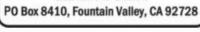
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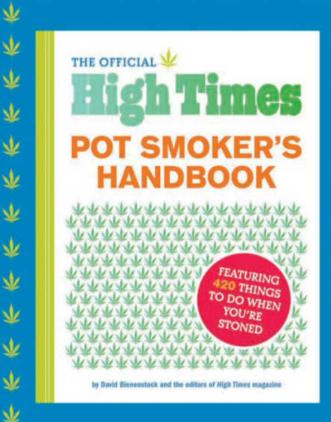
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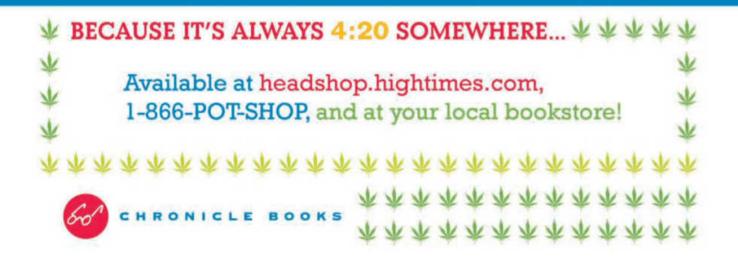
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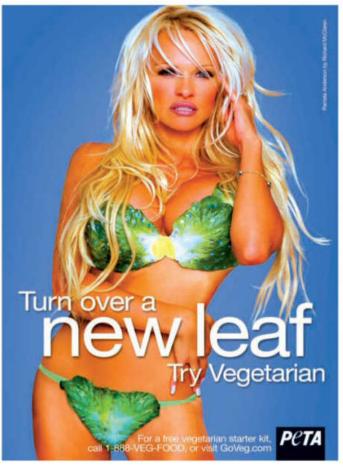






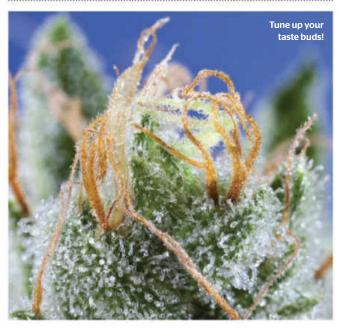






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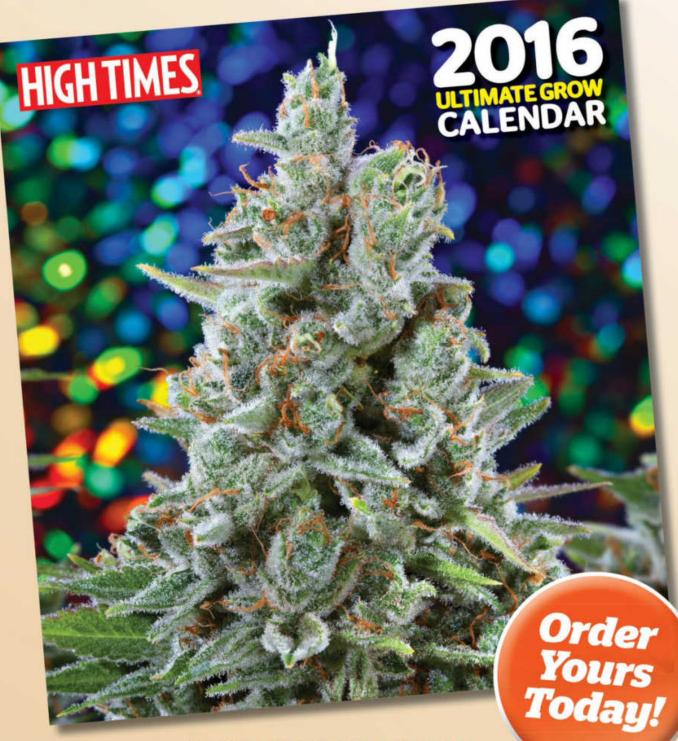
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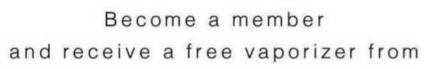


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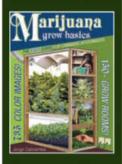
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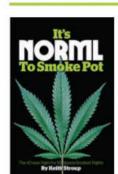
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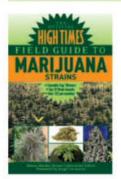


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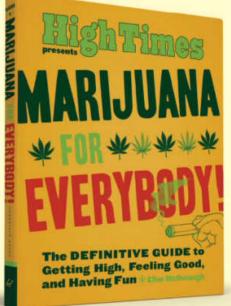
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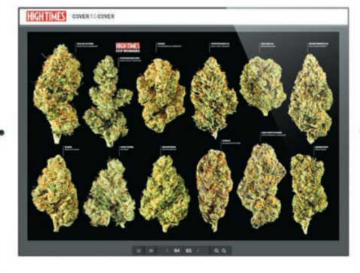


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