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HIGH TIMES

March 518

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HIGH TIMES MARCH



WE STARTED OUR HIGH TIMES SEED BANK HALL OF FAME IN 2007 TO RECOGNIZE THE FINEST IN CANNABIS GENETICS AND HONOR THE BREEDERS WHO WORKED HARD TO CREATE THEM.

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► FIRE ON THE MOUNTAIN



California has experienced devastating fires over the last decade. These fires seem to be intensifying as 2018 was a particularly destructive year in the Golden State. The Camp Fire, the state's most destructive, spread over 142,000 acres and razed 18,000 houses and buildings. Last summer, the Mendocino Complex Fire, which includes both the Ranch and River fires, burned an incredible 458,000 acres, while only destroying 280 structures.

Unfortunately, several of those structures belonged to Aster Farms, a cannabis grow founded by husband

and wife Julia Jacobson and Samuel Ludwig. Now, the Upper Lake cannabis company is rebuilding from the ashes of the Mendocino Complex Fire, calling their garden "a little oasis of green amidst moonscape." It's true the surrounding area has suffered utter devastation. Fortunately, Jacobson and Ludwig have the support of the community and a passion for pot. Read "How Aster Farms is Rebuilding After the Mendocino Complex Fire" on hightimes.com to learn more about their incredible story of resilience.



► ULTIMATE STONER GROCERY LIST

Most stoners have the munchies portion of a smoke sesh locked down. But some might be reconsidering their post-puff food choices. For those contemplative cannabis consumers, we present to you the highly valuable Ultimate Stoner Grocery List.

Sometimes just being in a grocery store stoned can feel intimidating. But *High Times* has your back. With our Ultimate Grocery List, you won't need to speak to strangers or wander the aisles. Just get your munchies and go!

Our Ultimate Stoner Grocery List covers a range of munchies and has something for everyone, from sugary snacks to indulge your sweet tooth to healthier, organic options for those watching their weight. We even have a few surprises in store, so hopefully we turn you on to some top quality nosh that you've never tried before.

Head to hightimes.com and check out the Ultimate Stoner Grocery List!

► ON INSTAGRAM

This little beauty is Primal Punch, grown and shot by @dawgothehutt and bred by @medgrower1 (Team OG). Incredibly, @dawgothehutt grew this gorgeous flower out with LED lighting by @spectrum_king_led. It's incredible how far LED tech has come in such a short time. Growers are seeing excellent results while reducing heat in their garden and cutting down on the electricity bill. Learn more about the evolving world of LED lighting and be sure to visit @spectrum_king_led.



► WE WANT TO HEAR FROM YOU!

Tweet your best high observations and comments our way (@HIGH_TIMES_Mag) for a chance to be featured on this page! And be sure to follow us on Facebook: (Facebook/HighTimesMag) and Instagram: (@hightimesmagazine) for all the latest news as it's happening!

@GrandmaCracker2: @HIGH_TIMES_Mag I live in Buckley, WA. Our population is about 5,000 and we just approved the opening of a third dispensary and we have 6 legal grow farms! Our money has financed a brand new fire station and added 2 new full time police officers to our PD. Life is good in Buckley

@spicolivans1: @HIGH_TIMES_Mag Craft beer has peaked. The bullshit they're producing to stay relevant is disgusting! We need national legalization for weed ASAP!

@Hailxc: @HIGH_TIMES_Mag Either way we don't need big tobacco controlling the cannabis industry and that's exactly what they're gunna do.

@PurablisCBD: @HIGH_TIMES_Mag We must take a better approach when talking about cannabis. Unfortunately, in many states, people still have to hide because they get persecuted wrongfully.

@Dab5_at420: @HIGH_TIMES_Mag If they're looking to change laws on homegrown cannabis it kinda defeats the purpose of it being legal. Growing your own is the best part of the relationship with Mary Jane.

@CannabisXpose: @HIGH_TIMES_Mag I've seen prices as low as \$50 per pound in southern Oregon.

@COsmicStardust: @HIGH_TIMES_Mag It's a great plant and at the end of the day it's just a plant. Unbelievable that people get arrested over growing a plant

@realmedicineMI: @HIGH_TIMES_Mag My corgi pup will steal a nug fresh off the plant as I'm carrying it to where I trim. Little stinker.



DOSI Sherbet

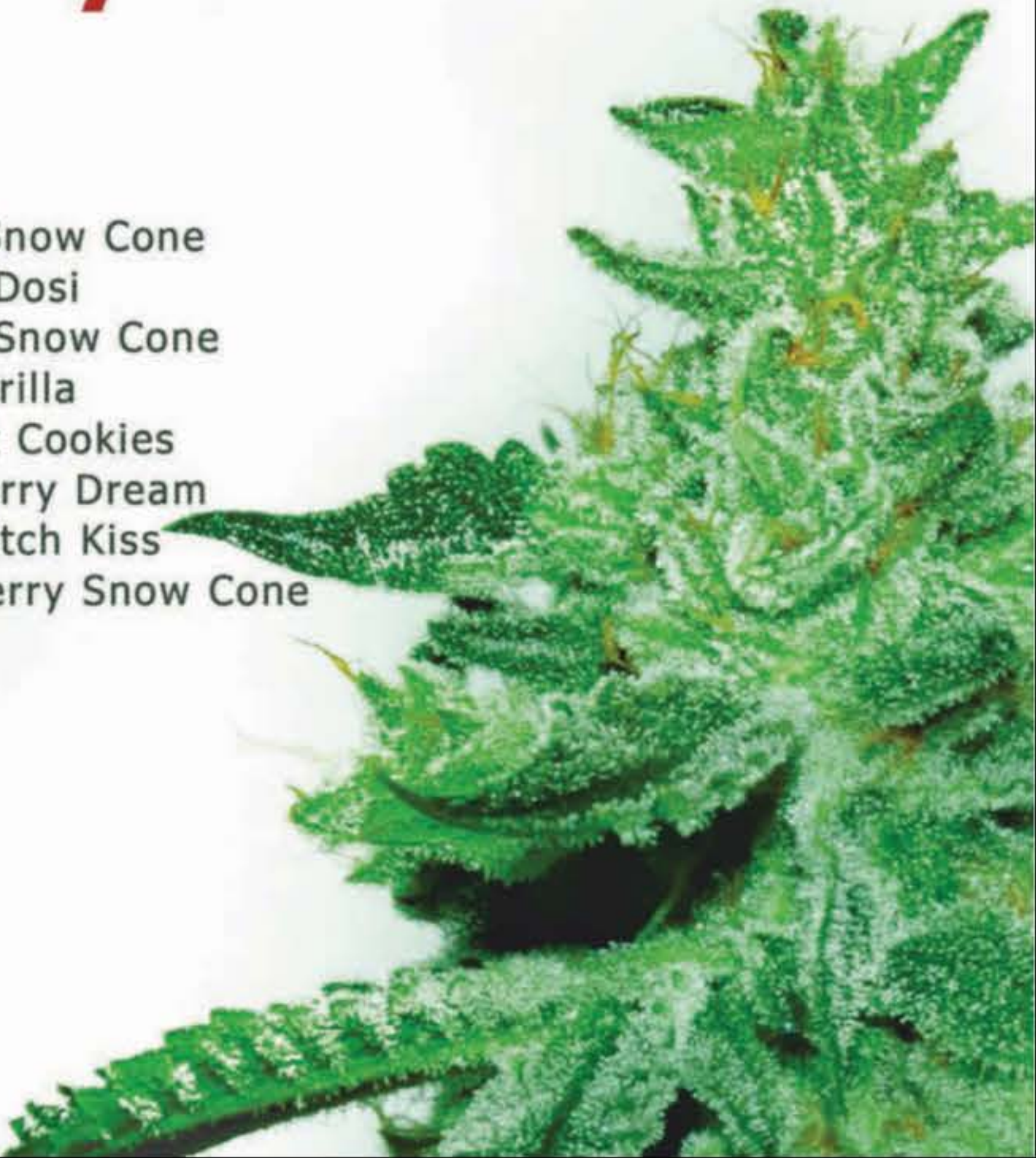
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MIND, BODY & SOUL

AS CANNABIS GAINS ACCEPTANCE legally and socially, more and more people are experiencing its myriad benefits. Athletes in particular are benefiting from marijuana's ability to protect and restore the body. This month, we investigate the role of cannabis in athletic training and how it can reduce pain and inflammation, stimulate appetite, promote the quality and quantity of sleep, and even protect the brain from traumatic injury. The right training regimen, which includes cannabis, proper nutrition, stretching and a holistic approach to healing, can help athletes at any level achieve better results.

And speaking of sports and pot, this month we talk to former NFL running back Ricky Williams, who was one of the first major sports figures to advocate for the medicinal benefits of cannabis. While playing in the NFL, Williams worked through an identity crisis, social anxiety, depression and injury. His use of cannabis to deal with these obstacles cost him an estimated \$10 million in fines and lost endorsements. An experienced practitioner of Ayurveda and yoga, Williams has combined alternative healing methods and cannabis in his new line of medical-marijuana products that can help open minds and connect patients with the world around them.

Also this month, we celebrate the world's best pot breeders by inducting 10 new companies into our Seed Bank Hall of Fame. Plus, we break down eight simple plant-training techniques that can increase your yield and lead to a heavier harvest. And finally, we check in on Canada's historic legalization effort to learn how the country's regulated cannabis can compete with cheaper, readily available black-market buds.

Enjoy the 518th issue of *High Times*.

Mike Gianakos
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LEARN FROM ISRAEL

When I read about how Israel is breaking ground in treating autism with cannabis [I was encouraged]. A neurologist in Jerusalem had begun experimenting with medical cannabis as a treatment for those with autism [based on the] marijuana plant's two primary compounds: the psychoactive agent tetrahydrocannabinol (THC) and cannabidiol (CBD), which works with the autistic mind. Israel has been at the forefront of medical marijuana research since modern health care began considering its merits. Dr. Raphael Mechoulam of the Hebrew University of Jerusalem, first identified THC in the early 1960s. It gives me hope as I myself am autistic.

As a self-identifying hippie, I wanted to find a more natural way of controlling pain, as well as my anxiety, which is how I found my way to weed. Marijuana oil is the key, making healing easier and everything more manageable, not just for me but for my family. Trust me, I know from the anxiety, restlessness, and outbursts of fear. It's about quality of life and the opportunity to feel safe and free the mind from hyper-focusing, a tendency that comes with autistic spectrum disorders.

Michele

MUSK'S PUFF

January's Issue of *High Times* had a blurb on the matter of Elon Musk having a puff on Joe Rogan's podcast. You'd think it a joyous moment when a wealthy, famous, intelligent and influential figure openly "came out," as it were, as a cannabis user.

Instead his actions were pretty much frowned upon and criticized despite being in a legal state. It's disappointing he didn't just own it more; why is this still such an issue? It's worth pointing out the importance of responsible use, which is the only matter I see as a possible issue, as I like the idea of automotive industry workers being completely clean during duty. It's noteworthy that Musk was merely doing an interview at the time [he consumed cannabis].

Austin

We couldn't agree more. A prominent figure like Musk openly puffing is indeed something to celebrate. Unfortunately, some of his actions leading up to the smoke sesh worried investors—and caught the eye of SEC investigators. Had he simply smoked some weed, the reaction likely would have been a bit different.



I WANTED TO FIND A MORE NATURAL WAY OF CONTROLLING PAIN, AS WELL AS MY ANXIETY, WHICH IS HOW I FOUND MY WAY TO WEED. MARIJUANA OIL IS THE KEY, MAKING HEALING EASIER AND EVERYTHING MORE MANAGEABLE

GREETINGS FROM PROHIBITIONVILLE

I would like to start by saying I love your magazine. I have been reading it for decades and my walls are covered with your pics. Living in Prohibitionville makes it hard to keep up with what is going on in the cannabis industry, with your magazine sometimes being the only in for us country folks. I try to follow along with the who's who and the what's what and always try to keep up with the most recent events. You make this much easier. Thank you!

I recently had to move to care for my aunt and I met a guy here in Arkansas who knows more about cannabis than anybody I have ever met. He was talking about stuff over my head but I was Googling the stuff, and I was amazed at the knowledge that poured out of one person. Not just about cannabis but mechanics too. I asked him how he had learned all this stuff and he went on to tell me about working on radar in the marines, then working in a vegetable oil extraction plant in the early '90s and reading *High Times* while running the equipment gave him many of his ideas.

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He started sneaking home the solvents to extract his cannabis and it wasn't

long after he said he pressed his first rosin with a grill cheese maker after watching some piece of machinery all day that prepped the seeds for the extractor. I told him I thought rosin was a new thing but he said people have been hot pressing oils from plant matter for 1000s of years and made a joke about bales of weed in the olive presses 100s of years ago.

*Frank M.
Arkansas*

Your friend is right. While rosin extraction has only recently become popular in the cannabis industry, the concept has been around for centuries.

HYDRO HOPES

I was thrilled to see your annual Hydro issue once again. I look forward to it every year and always find it informative and fun to read. I particularly enjoy reviewing the latest advancements in hydroponic

cultivation and consistently find that your hydro reporters do an excellent job covering all the latest in the field. Just wanted to say thanks and that *HT* never lets me down.

*Steven
Wisconsin*

GREAT GREEN NORTH

As a proud Canadian, I felt it was my duty to write and let you know about legalization up North. It is true that we've had some issues with supply. I'm sure you've heard that shops have regularly run out of product and that some folks have had to go back to their pre-legalization dealers when faced with coming up empty-handed at shops. Nonetheless, some growing pains were naturally anticipated and most people here are confident that the industry will adapt. More importantly, it just feels good living in a country that had the sense to end prohibition. While the market may be imperfect, we're optimistic and truly hope the rest of the world will soon follow suit.

*Colin
Victoria, British Columbia*

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2019 SEED BANK HALL OF FAME Find out which bud breeders we've enshrined as all-time champions of cannabis genetic research and development. See strains like this Trilogy from new inductees Nameless Genetics and more starting on page 62. *Photo by Justin Cannabis*

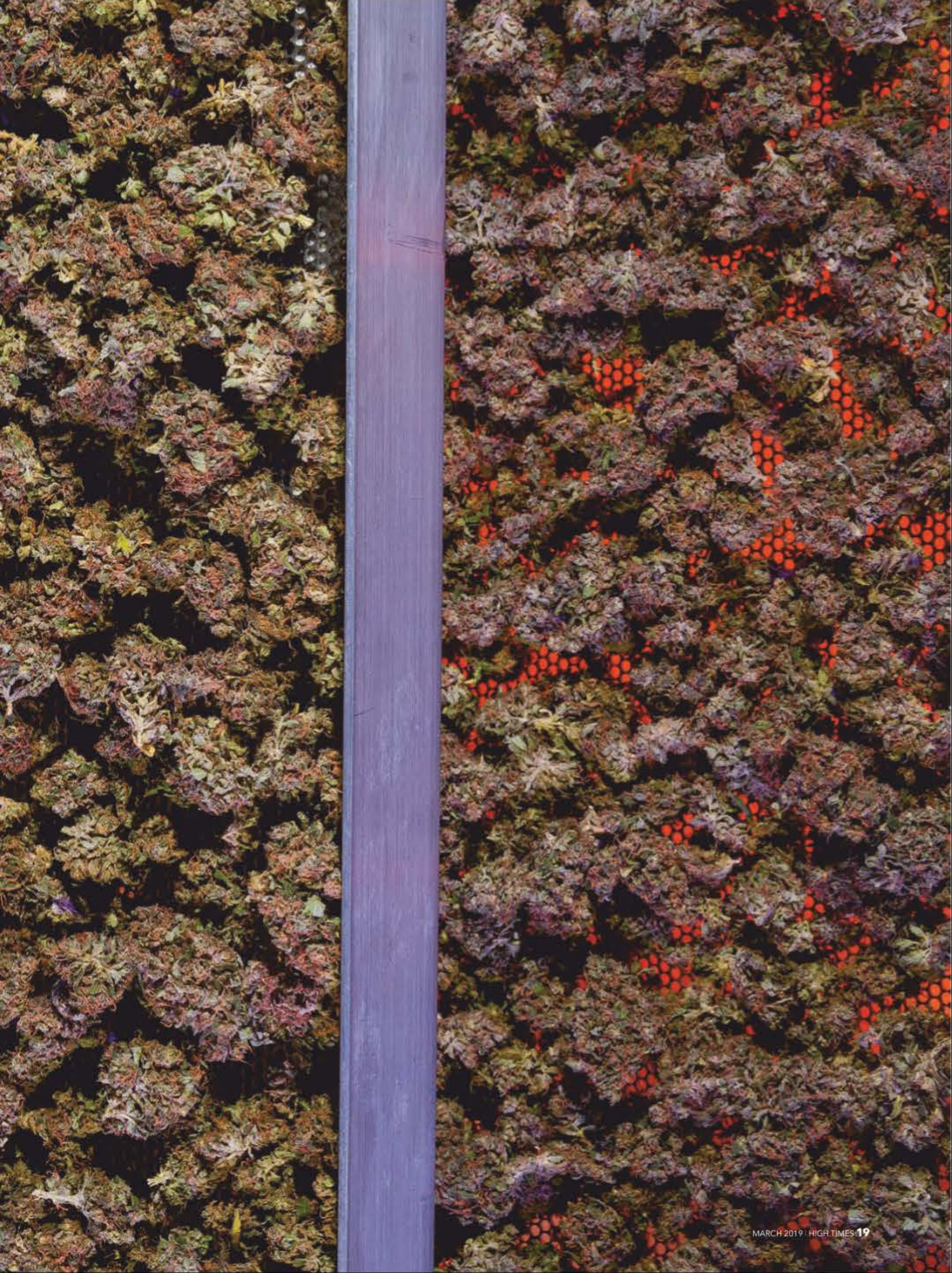
CONTACT
HIGH





**CONTACT
HIGH**

BLACK MARKET BUDS Canada legalized pot last fall but the program has faced growing pains like lack of supply and high prices. Will these issues push cannabis consumers back to the black market? Learn more on page 44. *Photo by Justin Cannabis*



The logo for 'CONTACT HIGH' is presented in a stylized, bold, sans-serif font. The word 'CONTACT' is positioned above 'HIGH', and both are contained within a dark, rounded rectangular shape that has a slight gradient and a soft shadow, giving it a three-dimensional appearance. The background of the entire page is a photograph of a cannabis grow room, showing rows of plants with green serrated leaves and developing purple-tinged buds. In the upper portion of the image, two large industrial fans are visible, hanging from the ceiling. The lighting is bright and even, highlighting the texture of the leaves and the structure of the buds.

PLANT TRAINING Growing cannabis indoors efficiently means maintaining a level and full canopy of flowering colas. Learn eight different ways for training your plants to perform at their highest potential so you can increase your yields substantially, on page 78. *Photo by Erik Biksa.*





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NEWS

SHROOMS

Will magic mushrooms be the next regulated drug? It's up to Colorado and Oregon... p.26



ENTERTAINMENT

DEL

Rapper Del the Funky Homosapien discovered the power of CBD after a serious accident. p.34



Money matters.



through the roof but demand has remained mostly steady. Econ 101 tells you what happens to price when supply outpaces demand, and the Beaver State boasts the lowest pot prices in the country. This is great for consumers, but it's driving some growers and others out of business, especially smaller players. The plummeting price is credited for moving more volume, however. Sales of recreational weed were right around \$543 million in 2018, a 29 percent increase over 2017. There has been a corresponding bump in tax revenue.

When Washington State went legal in 2014, there was a short-lived rise in the price of weed for a few months—attributed to the sharp increase in demand and the corollary drop in supply—but then prices

plummeted rather dramatically and have decreased in almost every quarter since.

It's fair to say that in the United States, issues related to price will settle down somewhat when pot is fully decriminalized at the federal level. For one thing, it will allow states that overproduce to sell their wares in other jurisdictions. Arguably, prices nationwide will drop further when weed is nationally legal, especially when cannabis concerns will be able to use banks, just like normal businesses (thereby obviating the need to spend for extra security, for example).

The price of weed is of course related to supply and demand, but in a deeply regulated market such as cannabis's, that relationship is not so easily parsed. One

THE PRICE OF DOING BUSINESS

AS THE US CANNABIS INDUSTRY GROWS, THE PRICE OF HERB DROPS. THIS MAKES CONSUMERS HAPPY (MOSTLY), BUT IT'S UNCLEAR HOW FALLING PRICES AFFECT WEED WORKERS, BUSINESS OWNERS AND THE INDUSTRY ITSELF. BY MIKE DIPAOLO

NOW THAT JUST about everybody in America is growing cannabis, in their closets or on gigantic commercial farms, the price of weed is dropping everywhere. This is good news for consumers and patients, but it's been a mixed bag for industry professionals and for the states in which they operate.

Since Colorado first broke ground on legalization in 2014, the price of weed

per pound has dropped a whopping 70 percent. In July 2017, in an effort to maintain revenue from cannabis sales, the state bumped up tax on all retail marijuana and marijuana-infused products, from 10 to 15 percent. Because the price of weed continued to fall, the expected gains from the tax hike were all but wiped out in the subsequent year.

In Oregon, weed production has been

« wild card is the US president. Trump's tariff mania, particularly as it has targeted China, has hit imported products such as lighting equipment, packaging and extraction equipment. Such disruption, so to speak, can increase the cost of growing cannabis on one end of the production line as well as the costs of value-added items like vape cartridges on the other. Again, it is the smaller players who will find it most difficult to stay afloat with such market stressors.

In the run-up to legalization in Canada, Prime Minister Justin Trudeau recommended that cannabis retailers cap the price at C\$10 per gram, with the idea that a low ceiling on price would be the only way to keep consumers away from the black market. After a couple months with a nationwide legal market in place, prices have ranged from around C\$5 to C\$15 per gram, depending on where you are and whether you're buying from a government-run or private retailer. Meanwhile, Statistics Canada estimates that black-market weed averages C\$6.83 per gram, while surveys show that around 40 percent of Canadians say that

THE PRICE OF WEED IS OF COURSE RELATED TO SUPPLY AND DEMAND, BUT IN A DEEPLY REGULATED MARKET SUCH AS CANNABIS'S, THAT RELATIONSHIP IS NOT SO EASILY PARSED.

price determines whether to buy from legal or black-market sources. The legal regime will need to mature more before we can draw too many conclusions (read more about Canada's black-market cannabis concerns on page 44).

Some policy mavens do indeed suggest that governments set price. "One approach for preventing this steep decline in prices—and making it easier to control the price—is for the government to set minimum prices," writes Beau Kilmer, co-director of the RAND Drug Policy Research Center, and Mark A.R. Kleiman, professor of public policy at the NYU Marron Institute of Urban Management, in the *Hill*. "Many states already set minimum prices for tobacco and some jurisdictions also set them for alcohol. Those minimum prices, and the taxes collected by the state, could be based on THC content, just as federal taxation of distilled spirits is based on

the level of alcohol. One advantage of a THC tax over the widely used taxation based on a percentage of price is that the THC tax won't fall as market prices fall."

As Big Marijuana enters the arena, we can expect more mega-farms producing tons of product, and they will certainly underprice smaller grow operations. Some will take losses for a time in order to drive smaller competitors off the field. Some will deploy more and more automation, thereby avoiding the attendant expenses of a human workforce. This dynamic could set up a race to the bottom, in which lower prices correlate with lower quality. Worse, rock-bottom pricing might subvert one of the high-minded goals of a legal cannabis market: promoting economic opportunity for communities that bore the brunt of prohibition.

It won't be surprising if the price of weed continues to drop, but the implications should give us pause. 🌿

HIGH FIVE BY FRANK GREGORY

CANADIAN CANNABIS CONCERNS

THE PATH TO LEGAL WEED IN CANADA HAS BEEN ROCKY.



PRODUCTION/SUPPLY
Don't throw away your dealer's phone number just yet. Estimated recreational demand in Canada far exceeds the supply on hand. It appears licensed producers (LPs) are not far enough ahead to keep up with the demand created by legalization. The black market will pick up the slack in the short term. This is a problem with the supply of legally produced weed, and the shortage is expected to become more pronounced as the year progresses. Fortunately, dispensaries will remain open with the hopes that LPs can catch up.



DISPENSARIES
Alberta has 17 dispensaries, mostly in Edmonton. However, British Columbia had just one dispensary open when legalization went into effect—located four hours away by car from Vancouver. The submission of retail applications only began in August, and there are over 100 applications submitted, but the wheels of progress are turning slowly as vetting and licensing procedures may actually take up to 18 months to complete. In August, Ontario delayed the start date of legal retail sales but did open an online delivery service.



POLICIES
Policies for cannabis are a messy patchwork of laws, some of which are still to be determined. There are laws that contradict others elsewhere in the country—even over a bridge a few miles down the road. Provincial laws vary so much that one needs an app to determine the regulations from one province to the next. Public-safety rules include motor-vehicle laws concerning intoxication, but they are inconclusive as authorities attempt to apply alcohol regulations to cannabis for expedience when, in fact, those rules neither apply nor make sense.



BORDER ISSUES
Bill Blair, the government minister of border security and cannabis, says that it will be a serious criminal offense to carry any amount of cannabis into the United States. Blair made clear that indicating to border agents that you are carrying cannabis would result in denial of entry. But lawyer Kirk Tousaw advises Canadians attempting to enter the US to tell the truth to agents if they're carrying cannabis or to answer no questions. You may be denied entry, but lying to US federal agents, even if you're Canadian, may result in a felony and up to five years' imprisonment.



CANNABIS AND KIDS
Attorney Kirk Tousaw says that due to differences in cannabis laws among the provinces, it's hard to get a "complete picture of potential legal liability" with regard to teens accessing pot. But he points out that when it comes to alcohol, "we don't criminalize parents" or require them to lock their alcohol cabinets. However, Dr. Gigi Osler, president of the Canadian Medical Association, advises parents to treat recreational cannabis as they would a prescription medication. "Keep it out of the reach of young children in particular," she says.



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Potent puff

VAPING VS. SMOKING

The good news is that vaporizers deliver a stronger dose of THC than conventional smoking. The bad news is that vaping also delivers more of the “adverse effects” of weed, whatever those are. Researchers at the Johns Hopkins Pharmacology Research Unit dosed 17 participants with weed, comparing the two delivery systems, and found that vaping delivers more of the good (and bad) stuff. Their findings were published in *JAMA Network Open*. After consuming zero, 10 or 25 milligrams of THC, the volunteers filled out questionnaires, took cognitive tests and had their vitals monitored. Vaping brought greater concentrations of THC to the subjects’ blood, and led to more errors in the cognition tests. The study’s lead author, Tory Spindle, told NBC News that vaping might bring the stronger high because the weed doesn’t get destroyed by fire. “The difference is most likely due to some destruction of the drug when the cannabis is burned, which doesn’t occur when it is vaporized.”

CANNA MONTANA

A Montana inmate says it is his God-given, which is to say religious, right to smoke weed in jail. Adam Owen Grady, 34, who is serving a five-year stretch in the Missoula county jail for possession (of explosives!), has filed a federal complaint to reinstate this right. Citing a verse from Genesis—the one where God says he gifted mankind “every herb bearing seed”—Grady said, “It is my Godly Rights to consume marijuana for Christian rights [sic],” according to the *Missoulian*. His jailors disagree. “Marijuana is a federally band [sic] substance and is not allowed in correctional/ detention settings. Right to consume an illegal substance is not protected under religious rights,” Lieutenant Jeff Rodrick replied on one of the grievance forms Grady has filed over the last year. It is unclear what happens next, as Grady may or may not have paid the filing fee for his recent appeal to higher authorities.



Mr. Spliff Goes to Washington

BLUNT FORCE

Snoop Dogg, like many other visitors to the nation’s capital, recorded part of his patriotic journey to DC in video. At his Instagram page (@snoopdogg), Snoop posted clips of the Lafayette Park portion of his outing, in which he blazed brazenly nearby the White House. While other Americans were “doing other bullshit,” the rapper said, apparently referring to the midterm elections, he was hanging out in the park, puffing placidly and taking selfies with fans, occasionally offering astute political commentary such as “Fuck the president” and other profundities. Back at his hotel room, Snoop continued to puff hard, blow clouds directly at the camera and relax mightily. His day at the White House reminded some of his 2017 rap video wherein Snoop mock-executed a clown-like Trump character (redundant?) with a handgun. The president took the bait then and responded with some off-point bluster on Twitter, decrying Snoop’s “failing career.” Projection much?



Bumper crop

BORDER TROUBLE

Now that Canada has legalized it, some of it is coming south. Arrests and seizures for cannabis in Western New York are up since the Great White North went legal in October, the *Buffalo Law Journal* reports. US Customs and Border Protection in Buffalo recorded a jump of 140 percent in the amount

of weed seized compared with October of 2017, with the number of arrests up, from 27 to 62, in the western district. Farther west, ex-CFL player Duron Carter received an “absolute discharge,” the lowest-level adult sentence, after pleading guilty for possession, having crossed the border (in the other direction, south to north) with a few grams of weed. The former Saskatchewan Roughrider was busted last February at the Saskatoon Airport. Carter had been nailed previously in Winnipeg in 2017 for showing up in Canada with pot cookies in his luggage, for which he also got an absolute discharge.

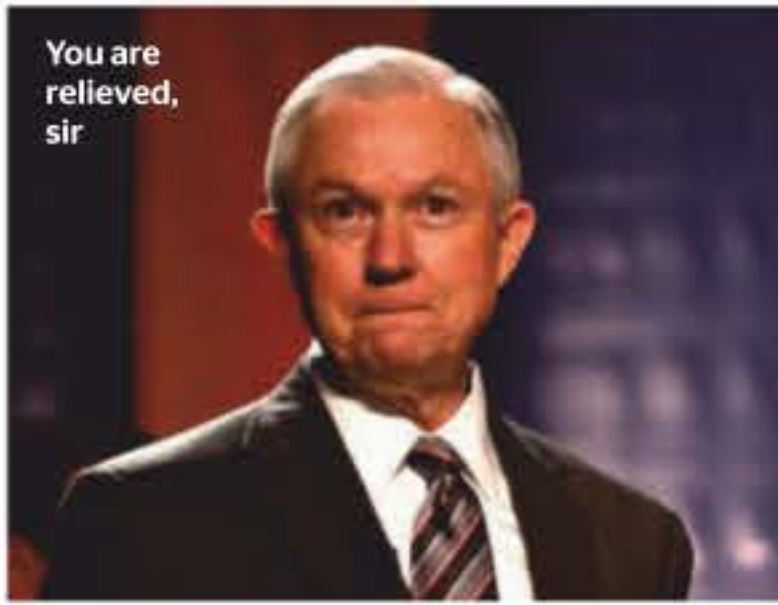
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SESSIONS OVER

It's probably futile to attempt to read the tea leaves around marijuana-related stocks, since the only trend we've seen is volatility, and that's no trend at all. However, some observers noted the positive movement on pot stocks immediately following the midterm elections in the United States, with a discernible bump a day later when Jeff Sessions was relieved of his post as attorney general. Bloomberg reported that exchange-traded funds that track cannabis stocks, such as the Horizons Marijuana Life Sciences Index ETF in Canada and the US-listed ETFMG Alternative Harvest ETF, both of which popped on the news, gained as much as 9.1 percent and 7.9 percent, respectively. The report noted that stocks had taken a dive when the notoriously anti-weed Sessions was appointed in 2017. "He was the biggest foe in the administration," according to Ken Shea, an analyst at *Bloomberg Intelligence*. "This might give Trump a little more wiggle room to be more cannabis oriented."

COLUMBUS CIRCLE JERK

Ohio law requires that 15 percent of cannabis licenses—to grow, process, sell and test medical weed—go to minority-owned concerns. As such, the state's Department of Commerce awarded two of the 12 cultivation licenses to minority ganjapreneurs. But a couple of companies passed over to fulfill this requirement cried foul and took the department to court. Franklin County Judge Charles Schneider sided with the plaintiffs and ruled the law unconstitutional. The state had hoped to redress the racist effects of the Drug War (African Americans and Latinos are arrested for cannabis crimes at ridiculously higher rates than whites), but Schneider ruled that the law had been poorly aimed: "If the legislature sought to rectify the elevated arrest rates for African Americans and Latinos/Hispanics possessing marijuana, the correction should have been giving preference to those companies owned by former arrestees and convicts, not a range of economically disadvantaged individuals."



The next big thing

SHROOM SEASON

An ambitious plan to decriminalize psilocybin mushrooms in Colorado did not make the ballot in November, but proponents are confident the measure will be up for a vote in May of this year. The Denver Psilocybin Mushroom Decriminalization Initiative would make possession and use of shrooms by adults the "city's lowest law-enforcement priority" and "prohibit the city from spending resources to impose criminal penalties" for fungal fun. It would also establish a mushroom-policy review panel that includes City Council members, similar to the one that advises on the city's marijuana policy. Now comes Oregon, where the secretary of state has recently approved language for an initiative to legalize magic mushrooms in the Beaver State; if organizers get the required signatures, it might be on the ballot in 2020. Where have we seen this before, when Colorado blazed a freedom trail and the Pacific Northwest quickly followed suit? It's magic.



Not so divine intervention

SALT LAKE SHIFTY

Voters in Utah approved a medical-cannabis initiative in November but, it being Utah, had to suffer the conservative lawmakers who met to water it all down following the election. In December, legislators in the state's House of Representatives made changes to the initiative by putting the kibosh on many types of edibles, nixing the plan to let rural residents grow their own and limiting the medical conditions required for patient eligibility. The *Idaho Statesman* reported that the alterations

followed two hours of debate with support and opposition along party lines (Democrats wanted to leave the initiative alone; Republicans, who control the House and Senate, wanted to muck with it). It now goes to the State Senate, where it is expected to pass. A prominent supporter of the weakened law has been the Mormon Church, which was in on the negotiations that resulted in the crappy compromise. Med-pot activists are mulling whether to sue, citing collusion between the church and House Republicans.

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BUILT TO LAST

ROYAL TRUX RETURN TO THE SCENE AFTER TWO DECADES WITH AN ALBUM "BUILT AROUND WEED." BY JOHN PAYNE

THEIR FIRST NEW long-player in 18 years thrusts infamous alterna-rock outlaws Royal Trux back into the public eye, and hey, it's *not* exactly like they never left. No, their new *White Stuff* album (Fat Possum) is chockfulla the kind of ear-druggy surprises we've missed from these badass brutes in the intervening years, and the good news is they haven't stopped evolving (didn't say "maturing," let's not get carried away). Fronted by Richard Burton and Elizabeth Taylor—a.k.a. singer-Moog/guitar/melodica tooter Jennifer Herrema and guitarist-vocalist Neil Hagerty—the iconic band now bring an updated, *heavily* head-banging and wickedly weird Trux to the table, and we've just got to deal with it on their terms.

For Trux, it couldn't have been easy picking up where they left off and having a go again in 2018. Or was it?

"Well, yes and no," says Herrema. "When Neil and I started playing together [live]

again two and half years ago, it was as if time had stopped, like, 'Oh, here we are,' and everything was great. But when it came to recording new material in the studio, it was more complicated, because in the past Neil and I had always lived and worked together, so we could just banter back and forth."

The exigencies of modern so-called life determined that *White Stuff* would have to be created largely via long-distance communication, along with studio time spent together in beautiful downtown Burbank, CA.

"Now it was more like emailing stuff to each other, because Neil lives in Denver [Herrema is based in SoCal], and we had people guest-playing on the album who flew in for the sessions," Herrema says. "And instead of Neil and I recording and producing it like we always do, we turned over those duties to a neutral party. In the end, it all worked out. But it was a crazy, crazy process."

The sinister, lurid, hilarious

and heartfelt *White Stuff* is a real return to the glories of the haywiredly eclectic sound that stamped Royal Trux so definitively on the '90s alterna-rock map. Trux bring both their much-lauded primitive-intuitive raw power and fascinating *Bitches Brew*-type mashups culled from the pair's contrasting interests in all things punk rock, hip-hop, jazz, metal, obscure noise and even world music, in songs like the thumping mid-tempo rockers "White Stuff" and "Every Day Swan." "Suburban Junkie Lady" is a slowish, opiated thing with ace multitracked vocals and frigging congas at the song's coda, and ambiguous-pop choon "Sic Em Slow" is an EZ-flowing rock/funk jam that manages to incorporate the

sounds of a gamelan in its intro. Hagerty's authentically rock-great flashy axe work on "Year of the Dog" is a joy, and along with the moody snake-guitar instrumentals "Purple Audacity #1" and "#2," you get rapper Kool Keith throwing down with a stream-of-consciousness Herrema on "Get Used to This."

In taking a hiatus on their Black Bananas and solo-album projects, respectively, Herrema and Hagerty have reforged a relationship that seemingly will never stop vibrating with creative resonance.

"The songs kind of push and pull at each other. It's like they're always in a fight, but they're always finding a middle ground."

"This album was completely built around weed," Herrema adds. "That's kind of why we were slower in the studio on this record, because we would take these *long* extended weed breaks [laughs]. But that was all part of getting to the end result, which is this record. So it's all good."

The two Truxers prefer *sativas*, though Herrema says they end up doing hybrids a lot "because some of the *sativas* can get you a little stuck in your head round and round." Favorite strains include Blue Dream and the mighty Tangie, though neither can boast what Herrema's latest discovery, flash-frozen live-resin THCA, brings to the game. "It gets you pretty stoned," she says, "but I swear whenever I smoke that stuff I can see everything so clearly. It actually improves your vision." Herrema's down with cannabis for live performances, too, unlike a lot of musicians who feel smoking prior to playing messes too much with their onstage focus. No problem, she says. "I never know what's going to go on when we play live anyway!" 🌿



THE ROYAL WE:

Herrema explains, "I love Neil dearly and think he's one of the most talented people I've ever met. He's one of my best friends, but he thinks about things differently than I do, and that's what always made Royal Trux work."

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NO NEED FOR ALARM

AFTER AN ACCIDENT, DEL THE FUNKY HOMOSAPIEN DISCOVERED THE HEALING POWER OF CBD. NOW, 27 YEARS AFTER THE RELEASE OF HIS DEBUT ALBUM, HE CONTINUES TO EVOLVE MUSICALLY. BY KYLE EUSTICE

DEL THE FUNKY Homosapien endured a life-altering experience while performing overseas with Gorillaz at the 2018 Roskilde Festival. During their performance of "Clint Eastwood," Del tumbled off the stage and suffered significant injuries. Gorillaz front man Damon Albarn immediately sprang into action and stopped the show.

"He [Albarn] was in shock," Del recalls. "He thought I was onstage behind him. When he turned around, I wasn't there. He looked down and I'm in a fucking hole behind him. I'm calling to him like, 'Please help me. Help me.'"

At this point, Del was unable to move. Subsequently, he was rushed to a Danish hospital where doctors discovered he'd not only broken several ribs but had also punctured a lung. After

several weeks in Denmark, Del was finally cleared to go home.

Now back in the United States, life looks slightly different for the Bay Area hip-hop luminary.

"I'm trying to get my head together while I'm here," Del admits. "Physically, I'm okay. Mentally, I'm working on that. It was a lot to go through. I had to go talk to a psychiatrist because there was no way I was about to go back on the road. I didn't trust nobody. In a way, it was good that it happened because it forced me to think about all this other shit that was happening in the background, even from my childhood. I guess a lot of shit was just repressed."

Del credits his occasional use of CBD oil with helping him through periods of anxiety. "It calms me down," he says. "I used

it maybe about a year or two ago. I get it whenever I'm around it. It's not something that is within my grasp all the time, but if I see it, then I'm going to grab some. It takes the edge off."

It makes sense he'd need to unwind—Del has basically been going nonstop for the past 27 years. His 1991 inaugural album, a nod to George Clinton of Parliament-Funkadelic, *I Wish My Brother George Was Here*, was partially produced by NWA legend Ice Cube, who also happens to be Del's cousin.

DEL CREDITS HIS OCCASIONAL USE OF CBD OIL WITH HELPING HIM THROUGH PERIODS OF ANXIETY. "IT CALMS ME DOWN," HE SAYS. "I USED IT MAYBE ABOUT A YEAR OR TWO AGO. I GET IT WHENEVER I'M AROUND IT."

Following the album's moderate success—thanks in large part to the project's anchor "Mistadobalina"—Del took the reins and released his seminal album, *No Need for Alarm*, in 1993. *Alarm* spawned classics such as "Wack M.C.'s" and "Catch a Bad One" while ushering in a whole era of skateboard-wielding weirdos obsessed with alternative rap, which was a far cry from the gangsta rap emanating from the West Coast at the time.

While acknowledging *No Need for Alarm's* recent 25th anniversary, Del doesn't want to be defined by just one album. He's constantly evolving and pushing out projects to add to his colorful catalog. Most recently, he teamed up with Bay Area producer and all-around musical genius Amp Live for *Gate 13*, a shining example of Del's rhyming prowess and storytelling brilliance.

"I want people to be here for moments that are about to happen, too," Del says. "Because a lot of people, they just gave up on the shit or they just don't listen to music anymore, like, 'I'm grown now. I don't need to listen to this shit.' The average person, they listened to whatever was popular when they was in high school, but as they got older, they out the loop. They don't really relate to this other shit. It's just like, 'Okay. I guess it's over.' I just want them to know I'm still here." ✨



FUNKY WISDOM

Del has a new project coming out under his smooth alter ego Funk Pimpin'. As Del explains: "He knows things. If you need some information, he'll keep you on the right trail—if you choose to listen. He's helpful, though, not harmful."



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ULTIMATE FIGHTERS

SUPER SMASH BROTHERS ASSEMBLES A CAST OF VIDEO GAME CHARACTERS TO DUKE IT OUT.

SUPER SMASH BROTHERS has always been the ultimate nostalgia trip—some of video game’s most classic characters fighting each other to the end is the ultimate in fantasy crossovers. It is telling that the fifth entry in the series, *Super Smash Bros. Ultimate*, feels like a “greatest hits” of both the franchise and video games as a whole, while at the same time taking the franchise into uncharted territories (though no Nathan Drake crossover, yet).

Ultimate assembles every fighter from the previous games as well as new ones, bringing the total amount of ass-kickers to 78. Quite a few of the

fighters have extremely similar move sets (looking at you, Captain Falcon and Ganondorf), but the sheer wealth of characters and fighting styles more than make up for it.

Everything you expect is here, Classic Mode, 100 Man Brawl, etc., along with a new adventure mode that tasks you with freeing spirits from across the gaming universe.

This allows for some fun fan service, but can quickly get repetitive as many of the spirits give the same bonuses. Still, it gives players a way to interact with unique rule sets, as well as gets them out of their comfort zone with new characters. While it may not be the mode people spend the most time in, it’s great for getting your feet wet. And once they’re wet, plain old *Smash* is every bit as fantastic as you remember, now with online play (though, that still has a few kinks).

All in all: *Super Smash Bros.* truly earns the *Ultimate* in its name.

Note: Using the Switch’s native Joy-Cons takes some getting used to, and using only one half of the controller for multiplayer is uncomfortable at best—it’s best to splurge for the re-released GameCube or Switch Pro controllers.



SUPER SMASH BROS. Ultimate
Nintendo

MUSIC RECOMMENDATIONS



CLAYPOOL LENNON DELIRIUM
South of Reality
ATO Records

On the dynamic dyad’s sophomore album, Les Claypool continues combining his rigid rhythms with Sean Lennon’s avant stylings to great success, as on dreamy “Boriska” and the careening title track. “Blood and Rockets” pays tribute to 1950s visionary Jack Parsons. Complex bass

from Claypool drives “Little Fishes,” while “Amethyst Realm” builds momentum via Lennon’s piercing guitar and evocative vocals. An ambitious “sequel” to a song on their first LP, “Cricket Chronicles Revisited” is a psych/prog stew with its own hilarious list of “side effects” read aloud. *Mark Miller*



EVIL TRIPLET
Have a Nice Trip
Super Secret Records

If “post-psych” is a thing, then Evil Triplet are the definitive torch-bearer of the sub-genre, as the Austin, TX trio makes America weird again with their latest release. “Space Kitten” launches off of a cosmic tribal groove, while “Pyramid Eye” sports the LP’s sharpest retro riff. “Aren’t

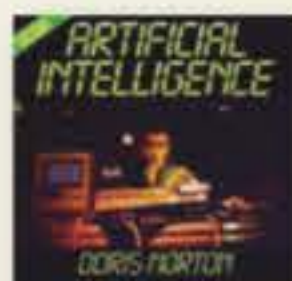
You Experienced?” a partial parody of the similarly titled Jimi Hendrix tune, details a novice’s inaugural acid trip, with great freak-out lyrics. The chimeric sprawl of closer “Apparition” has guitarist/vocalist Steve Marsh wisely wondering if he should believe in a spirit barely seen. *MM*



YONATAN GAT
Universalists
Joyful Noise Recording

Most know Gat as guitarist of visceral garage/noise trio Monotonix. His second full-length release, *Universalists*, beguiles with spiky restrained chaos that comes in waves. Droning textures swirl over winding reverb-laden guitar improvisation worthy of Yes’s Steve Howe on opener “Cue the

Machines.” Nicely sequenced, the album slides from spacey last-call jazz into punky Dick Dale-tinged throttle and pulsing, glitchy jazz-funk. It’s a striking effort that strolls and staggers through a Bourbon Street of international styles, cross-pollinating and clashing in acid-washed twilight. Boundless. *Chris Parker*



DORIS NORTON
Artificial Intelligence
Mannequin

A pioneer of the use of the personal computer in the creation of music, producer/composer Doris Norton was sponsored by Apple in the 1980s. Reissued alongside her earlier experimental groundbreakers *Norton Computer for Peace* (1983) and *Personal Computer* (1984), this 1985

gem sparkles with trills and prickly sounds that recall a fax connecting. I can’t tell if she’d be thrilled or horrified to discover that the title track conjures the Who’s “Baba O’Riley” (1971), but I would love to know her thoughts on that and pretty much anything else. This woman is a genius! *Polly Watson*



SKULL FIST
Way of the Road
Napalm

Following front man Zach Slaughter’s vocal surgery, these Canadian NWOTHM beasts were forced to pace the cage for nearly two years as he healed; they return here, with their third album, nine tracks of traditional heavy metal infested with hammer-ons, pull-offs, lickety-split riffs, and insane

twin-guitar solos. The majority of the tracks find the band slowing down a bit and delving further into melody, but with the inclusion of rippers like “I Am a Slave” and the aptly titled “Better Late Than Never” young tigers and old lions alike will find plenty to sink their fangs into. *PW*

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POTABLE POT

CAN CANNABIS-INFUSED BEVERAGES OVERTAKE BEER AND WINE?



J.J. McCoy is Senior Managing Editor for New Frontier Data

BEEER HAS HAD a long ride as the unofficial drink of St. Patrick's Day, but proponents of cannabis-infused beverages think that change is coming.

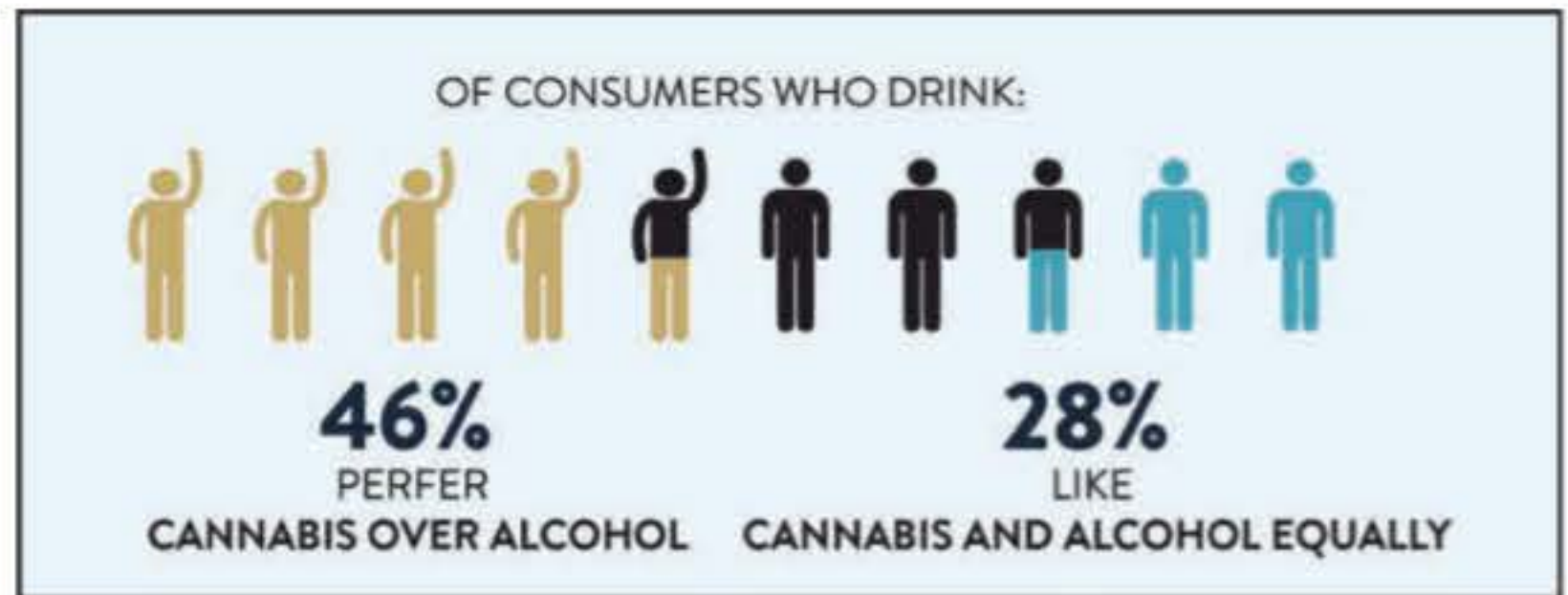
Last October, Molson Coors CEO Mark Hunter estimated that the cannabis market could total \$7 billion to \$10 billion in Canada alone, and that nonalcoholic cannabis-infused beverages could account for as much as \$3 billion, or 30 percent of that total market. Molson Coors had already struck a joint venture two months earlier with the Quebec-based cannabis brand HEXO.

A year before, Constellation Brands created a very loud buzz by announcing its investment in Canopy Growth Corp., acquiring 9.9 percent of the Canada-based company. It signaled a very public entrance by a Big Alcohol player into the cannabis industry. Equating to a 10 percent (US \$195 million) investment stake in Canada's largest LP, the move excited industry stakeholders about large, well-capitalized companies taking the cannabis space seriously.

With its major beer division based in Chicago, Constellation Brands has said that it would not be selling any cannabis products in the United States until it was "legally permissible at all government levels," while adding that it intends to "meet and stay ahead" of new consumer trends.

Heineken-owned Lagunitas Brewing Company, meanwhile, has already been distributing Hi-Fi Hops, its beer-styled sparkling water, in California. While it lacks alcohol, carbs or calories, each 12-ounce can (retailing for \$8 apiece) features 10 milligrams of THC. Blue Moon founder Keith Villa, through his company Ceria Beverages, is also making a concerted effort in Colorado to produce nonalcoholic beverages featuring various levels of THC.

The CEO of Coca-Cola was wary about entering the space given the lack of research and validity about the legitimacy, safety and daily consumable quotient of cannabis-infused drinks, whether THC or CBD. Nevertheless, Coca-Cola is still



ONE WAY TO ACHIEVE REPLACEMENT STATUS IS THROUGH MICRODOSING TO MATCH AN EQUIVALENT ALCOHOL INTAKE. BY INFUSING BEVERAGES WITH LOW DOSES OF THC, CONSUMERS WILL BE ABLE TO INGEST THE BEVERAGE AT A PACE COMPARABLE TO BEER- AND WINE-DRINKING.

planning to incorporate CBD in some beverages. For its part, Pepsi has announced no plans with cannabis, but given its established wellness product line (e.g., its Naked Juice and KeVita kombucha drinks) it would seem unlikely to cede the segment to its archrival.

Furthermore, according to *Beverage Digest*, US soda sales dropped for 12 consecutive years from 2004 to 2016. As consumers seek healthier products, the global health-and-wellness food market is expected to climb by nearly 15 percent, from \$707 billion in sales in 2016 to \$811 billion by 2021.

And while much is yet to be determined in the segment, there are some reliable indications to cheer would-be customers.

Cannabis-infused beverages—and specifically nonalcoholic drinks—can transform the edibles market. One frequently cited complaint about edibles is their delayed post-consumption onset of a high. Since edibles are processed through the gastrointestinal system rather than through the pulmonary system (as when smoked or vaped), the onset of the psychoactive effects can take 30 to 60 minutes compared with the nearly instantaneous effect of smoked cannabis. That lag has been one of the primary reasons for consumer resistance to edibles—especially among consumers such as pain patients, who might be seeking a more immediate effect. Still,

several companies are working aggressively to develop infused beverage products with uptake times of 15 minutes or less.

An alternative to drinking: In an October 2018 survey by New Frontier Data, nearly half (45 percent) of cannabis consumers who also drink said they intend to replace at least some of their alcohol use with cannabis in the future. For those who like the taste but worry about the health effects of alcohol, nonalcoholic cannabis-infused beer and wines will likely be intriguing potential replacements.

One way to achieve replacement status is through microdosing to match an equivalent alcohol intake. By infusing beverages with low doses of THC, consumers will be able to ingest the beverage at a pace comparable to beer- and wine-drinking. Finding a 1:1 parity of alcohol to cannabis-infused beverages is the focus of much investment and research as it will enable much easier education on how to consume cannabis beverages, especially for experienced alcohol drinkers.

With hangovers being one of the oft-cited downsides of consuming alcohol, a nonalcoholic cannabis-infused beverage will likely appeal to drinkers who are concerned about comparative health effects.

So by all means, raise your glasses this month and *slainte!* Just take note that the days of green beer may be over even sooner than you thought. 🍀



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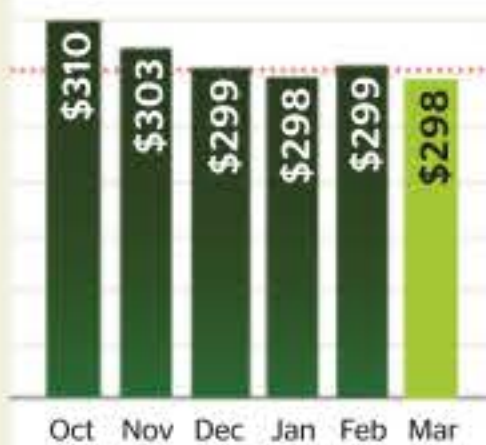
(GG4)
 "From Vegas dispensary The Grove, these soothing flowers get you through the peaks and valleys of vacation."
 -Las Vegas, NV

MARKET ANALYSIS

Prices by the ounce

All indices, with the exception of the Western Index, finished March below their previous month's average. However, all indices essentially held steady this month as the Western Index experienced the biggest change in price (\$5). The top five submitted strains featured three newcomers with the Girl Scout Cookies offshoot Do Si Dos taking the top spot.

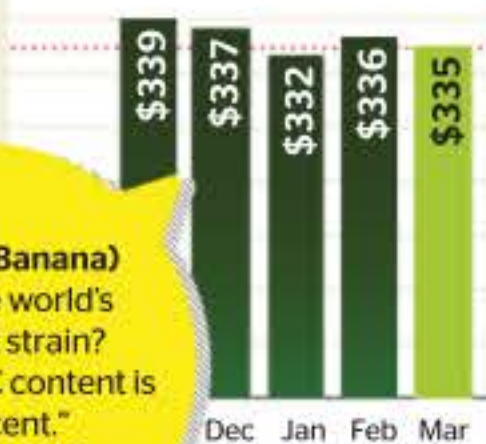
US Price Index
 YTD Average: \$299



Eastern Index
 YTD Average: \$311



Southern Index
 YTD Average: \$334



Western Index
 YTD Average: \$250



(Chiquita Banana)
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 -Portland, ME

TRANS HIGH MARKET QUOTATIONS

| STATE | CITY | STRAIN | PRICE |
|----------------------|--------------------------|---|---------|
| ALASKA | Ketchikan | Tundra Skunk | \$450 |
| ARIZONA | Glendale Kingman | In The Pines Grateful Breath | 160 250 |
| ARKANSAS | Springdale | Jet Fuel | 450 |
| CALIFORNIA | Anaheim Stockton | Khalifa Kush Do Si Dos | 240 360 |
| COLORADO | Denver Pueblo | Golden Goat Do Si Dos | 250 150 |
| CONNECTICUT | New London | Sour Diesel | 400 |
| DELAWARE | Dover | Sour Diesel | 160 |
| DISTRICT OF COLUMBIA | Washington | Orangeade | 335 |
| FLORIDA | Miami | Purple Punch | 320 |
| GEORGIA | Atlanta | Gorilla Glue | 300 |
| HAWAII | Honolulu | Purple Kush | 250 |
| ILLINOIS | Normal Waukegan | Diesel Bubba Gum Kush | 295 360 |
| INDIANA | Terre Haute Indianapolis | Jet Fuel San Fernando Valley OG | 320 300 |
| KANSAS | Wichita | Sour Diesel | 240 |
| KENTUCKY | Danville | Loud Dream | 280 |
| LOUISIANA | Shreveport | Girl Scout Cookies | 280 |
| MAINE | Portland | Chiquita Banana | 225 |
| MARYLAND | Baltimore Pikesville | Do Si Dos Blueberry | 265 330 |
| MASSACHUSETTS | Mashpee | Trinity | 325 |
| MICHIGAN | Ann Arbor | Alpha Omega | 320 |
| MISSISSIPPI | McComb | Gelato | 400 |
| MISSOURI | St. Louis | Durban Poison | 265 |
| MONTANA | Billings | Passion Fruit | 220 |
| NEBRASKA | Lincoln | Trainwreck | 360 |
| NEVADA | Las Vegas | GG4 | 300 |
| NEW JERSEY | Atlantic City | Blue Haze | 200 |
| NEW MEXICO | Albuquerque | Blue Dream | 234 |
| NEW YORK | Syracuse | OG Kush | 425 |
| OHIO | Ashtabula | Sour Diesel | 280 |
| OKLAHOMA | Oklahoma City Tulsa | Do Si Dos Cherry Pie | 480 240 |
| OREGON | Beaverton | Do Si Dos | 295 |
| PENNSYLVANIA | Pittsburgh | OG Kush | 480 |
| RHODE ISLAND | Providence | GG4 | 350 |
| TENNESSEE | Kingsport | Cherry Kush | 420 |
| TEXAS | Austin | Strawberry Kush | 200 |
| WASHINGTON | Clarkston Wenatchee | F**king Incredible Darkside of the Moon | 290 220 |
| WEST VIRGINIA | Parkersburg | Diamond OG | 500 |
| INTERNATIONAL | | | |
| AUSTRALIA | Perth | Tahoe OG | AU\$400 |
| CANADA | Hamilton | Wolverine Kush | C\$180 |
| SCOTLAND | Glasgow | Skunk | EU\$260 |

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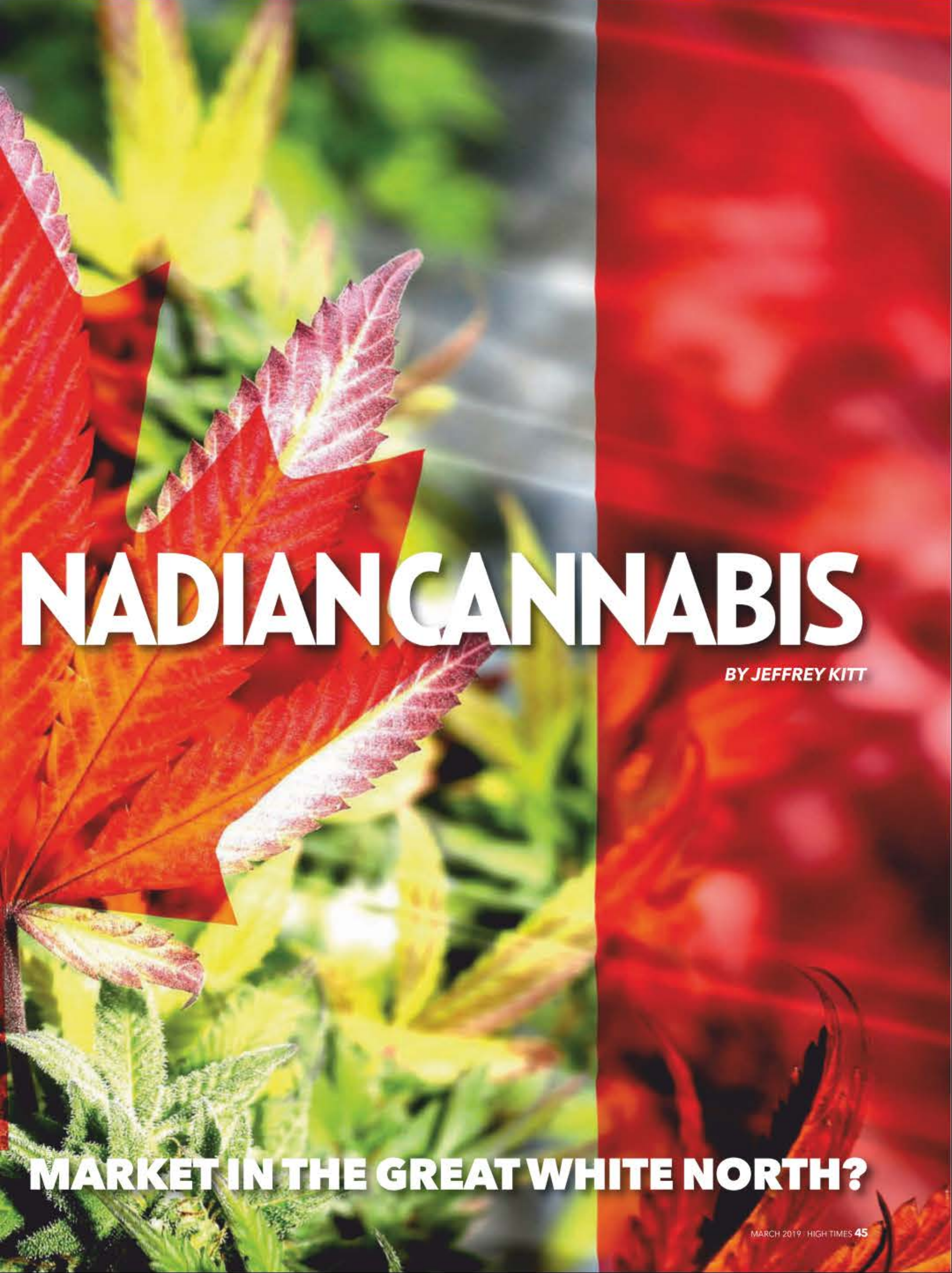
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CAN LEGAL POT PRICE OUT THE BLACK



NADIAN CANNABIS

BY JEFFREY KITT

MARKET IN THE GREAT WHITE NORTH?



Nova Cannabis on the first day of legal sales in Canada

LAST FALL, CANADA officially legalized recreational cannabis across the country. However, the first months of the program haven't been entirely smooth. Shops like Nova Cannabis, a modern and well-lit store off Whyte Avenue in south-central Edmonton, have everything apart from actual weed. Customers face a minimum three-day wait for restocks, or they can try their luck 40 minutes away at a shop in Fort Saskatchewan, but again there is no guarantee of ganja being in stock. Nova's shopkeeper seems disappointed, too. Since pot was made legal on October 17, he says, there have been queues out the door and around the corner on those occasions when bud is actually available.

It quickly becomes apparent that legal weed doesn't mean available weed in Canada—and that's to the benefit of the black market.

In this brave new world, the illicit pot market continues to have the competitive edge one month after Canada became the first G7 nation to legalize marijuana.

Provinces are struggling to meet

demand and the "prolific and functional" underground weed market is thriving thanks to cheaper prices and ready supply. It shouldn't be hard to guess what people will do when faced with the decision between waiting days for legal weed restocks or texting their dealer down the street. Ironically, the lack of legal weed is driving cannabis users back into the arms of the black market, the very same market the government is trying to neutralize through legalization.

As it stands, what other choice do cannabis-smoking Canucks have?

But industry insiders and cannabis diehards don't believe this will be the status quo for long. A new dawn is on the horizon, they say, with the one-two punch of industrial cannabis production and the coming crop of "micro-growers" expected to offer what the black market cannot—cheaper prices and higher quality than ever before.

DON'T DELETE YOUR DEALER'S NUMBER JUST YET

Manning the till at a smoke shop in downtown Edmonton, Gourgen (who did not disclose his surname) says shortages

have been predicted from both government agencies and general smokers. "Our news channels are broadcasting to us, 'Don't get rid of your pot dealers just yet!'" he says, amazed.

Edmonton offers a good snapshot of how things stand months after legalization. More than one million people live in the Albertan capital, a cold, sprawling urban center built on oil, which once boasted the biggest shopping mall in North America. In fact, there are strip malls on almost every street corner of the city. How they remain viable in the midst of a fossil-fuel downturn remains unclear. But another more pressing question comes to mind: Where can people purchase government-approved dank?

As it turns out, nowhere. While 250 stores are expected to open within the first 12 months of legalization in Alberta, only 17 were open and operating on Day 1—not the biggest selection for an area larger than France. The stores that are open have received huge interest from the public. For example, Nova Cannabis's five provincial shops, which feel like they're modeled after Apple Stores and contain descriptions of every type of

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strain imaginable, raked in \$1.3 million in the first five days after the Cannabis Act came into effect. But today the city store is bone-dry, a familiar story for cannabis retailers across the country.

Legal cannabis supplies are controlled by contracts between the government and licensed suppliers, and this makes shifting to new supply sources an arduous process when there are gaps to fill. When weed in the region runs out—as it regularly has—stores are often left in limbo waiting for the Alberta Gaming, Liquor and Cannabis Commission (AGLC) to resupply those lucky enough to hold an approved vending license.

Pricing is also a sticking point. On the Canadian black market, weed costs C\$7.60 to C\$8.64 per gram, according to government figures. For legal producers, the pre-tax price is expected to range from C\$6.67 to C\$8.33 per gram—but that's also before mandated pesticide screening and retail markup.

"A lot of people are like, 'Why the hell am I going to go to a dispensary and pay \$12 a gram for Pink Kush when I'm buying it right now for \$8 a gram from my guy?'" Gourgen says.

WHEN WEED IN THE REGION RUNS OUT—AS IT REGULARLY HAS—STORES ARE OFTEN LEFT IN LIMBO WAITING FOR THE ALBERTA GAMING, LIQUOR AND CANNABIS COMMISSION (AGLC) TO RESUPPLY THOSE LUCKY ENOUGH TO HOLD AN APPROVED VENDING LICENSE.

GREEN TAPE

Another major supply-chain problem, according to Aurora Cannabis community-relations manager David Howe, involves cannabis permits. Speaking at C-Tribe Festival's cannabis roundtable, Howe said there are producers across the country still waiting for licenses from Health Canada. They may have product, but they can't legally get it out to retailers.

"Definitely some permitting bottlenecks have occurred that have led to

supply bottlenecks, and that's what you're really seeing right now," Howe said. "It's extremely difficult overnight to [open up] an entire industry and expect supply to magically be at the level you want it to be... It's not really a reality."

But things should start to straighten out over time as both regulators and licensees adjust to the new paradigm, Howe said. For example, the AGLC has already been forced to change its cannabis-ordering system after a major backlash from retailers earlier this month. The online-ordering process meant retailers had to remain in a constant state of vigilance to pounce on whatever product became available, which often quickly sold out, the Calgary Herald reported.

Token Naturals chief executive officer Keenan Pascal noted at the C-Tribe Festival that he had heard plenty of horror stories from the first-come-first-serve system. Inconsistent deliveries meant some stores got new weed deliveries multiple times per day, while others only received deliveries weekly—making life especially difficult for smaller cannabis operations, Pascal said.



The advertisement features a photograph of a cannabis grow room. The ceiling is filled with rows of Spectrum King LED grow lights, which are long and thin, hanging from a metal frame. Below the lights, there are several rows of cannabis plants in various stages of growth. The lighting is bright and focused on the plants. In the top right corner of the image, the Spectrum King LED logo is visible, featuring a colorful flower-like icon above the text "SPECTRUM KING LED".

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"The worst thing right now is for mom-and-pop cannabis stores," Gourgen says. "All these guys right now are losing out. They're paying rent—five grand, three grand a month—and there's no weed to sell. It can actually ruin a lot of people."

The AGLC predicts these supply issues will work themselves out "within a year," but it remains to be seen how the black market and its legal counterpart will balance out.

BATTLE LINES DRAWN

The truth is that the black market still has the competitive edge. Marijuana edibles and concentrates remain outlawed under the Cannabis Act, forcing a portion of cannabis users to remain underground in pursuit of their high. Health Canada says it's undertaking research on these products with legal sales permitted "approximately one year after" October 17, but this will still not address the overriding decision-making element for users in the country: price.

Four out of 10 Canadians identify cost as the deciding factor in their pot purchases, and the black market remains cheaper gram for gram. The marijuana industry knows this is a battle that needs to be taken to the price front—and the

FOUR OUT OF 10 CANADIANS IDENTIFY COST AS THE DECIDING FACTOR IN THEIR POT PURCHASES, AND THE BLACK MARKET REMAINS CHEAPER GRAM FOR GRAM. THE MARIJUANA INDUSTRY KNOWS THIS IS A BATTLE THAT NEEDS TO BE TAKEN TO THE PRICE FRONT—AND THE SOLUTION, ACCORDING TO HOWE, IS SCALE.

solution, according to Howe, is scale. Aurora Cannabis is investing \$150 million into Alberta with the construction of new facilities like Aurora Sky, which is scheduled for completion by the end of 2018.

The grow house will be roughly the size of 14 football fields, making it what the company calls "the world's largest and most advanced cannabis facility"—that is until next year, when construction on another project, called Aurora Sun, is finished. That facility will be twice the size of Aurora Sky—at almost 1.5

million square feet—with an estimated annual production capacity of more than 150,000 kilograms of cannabis.

These facilities will produce a high-value, high-yield product for the recreational- and medical-cannabis sectors, and with more production comes lower prices, Howe said. In the future, the company, which is publicly listed with a market valuation of \$10 billion, expects to produce cannabis at below \$1 per gram before tax.

"That's a scale that's unmatched," Howe said.

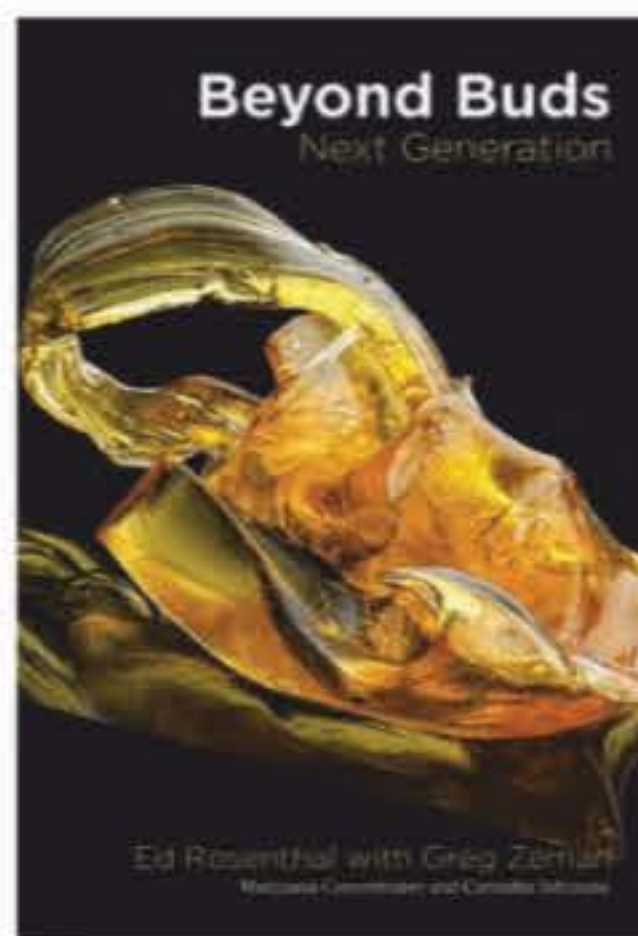
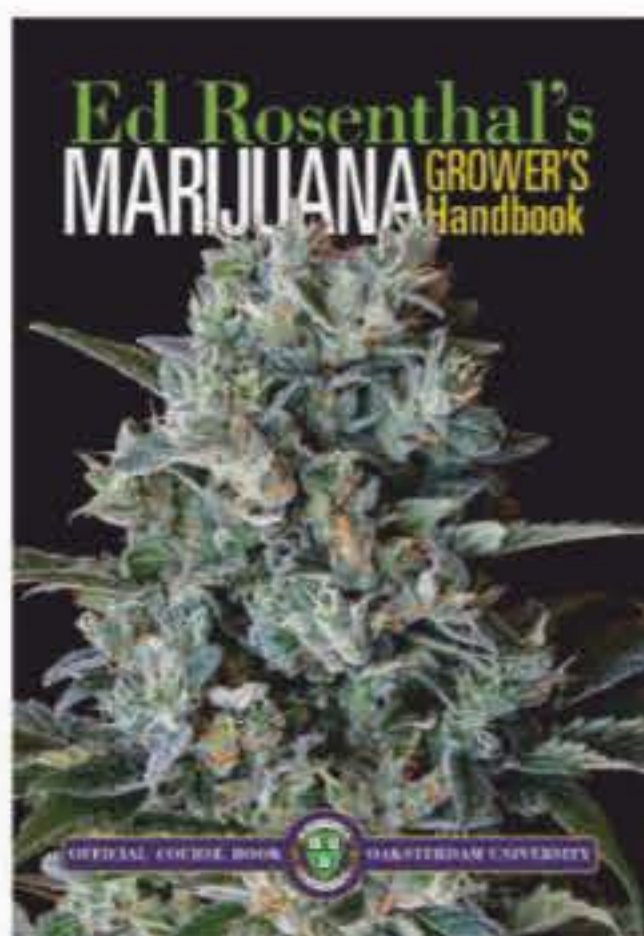
THE PRICE MUST BE RIGHT

For legal cannabis to win the price war, the federal, provincial and territorial governments need to play ball. A research paper by the CD Howe Institute argues that \$800 million in revenue could stay in the hands of the black market thanks to supply shortages and taxes—far outpacing the anticipated tax revenues of \$300 million to \$600 million in the first year of legalization.

To ensure the black market is effectively minimized, the institute recommends that the federal tax rate shouldn't exceed the current goods-and-services tax rate of 5 percent. It predicts a 5 percent

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sales tax would result in about 88 percent of the market shifting to legal consumption and \$216 million in federal taxes. The higher the tax rate, the report warns, the more likely users will shop in the black market.

Government leaders maintain that one of the consequences of legalization will be the eradication of the black market and the organized crime that comes with it. To that end, the federal government has imposed new penalties for the selling of cannabis outside of the mandated system, with punishments including up to 14 years in prison for selling weed to a minor or selling it without the proper papers.

Whether or not these harsh sentences will be enforced is another question. National cannabis-related charges dipped to their lowest levels in two decades in 2017, with Statistics Canada noting the continuation of a six-year downward trend. And since legalization? The Calgary Police Service reports that there have been two arrests for driving under the influence in the city, the same as the month before legalization. "October 17 has come and gone and the sky has not fallen," says Katie Doucette, the Calgary Police Service's project manager on cannabis.

It seems that the biggest spike in

GOVERNMENT LEADERS MAINTAIN THAT ONE OF THE CONSEQUENCES OF LEGALIZATION WILL BE THE ERADICATION OF THE BLACK MARKET AND THE ORGANIZED CRIME THAT COMES WITH IT. TO THAT END, THE FEDERAL GOVERNMENT HAS IMPOSED NEW PENALTIES FOR THE SELLING OF CANNABIS OUTSIDE OF THE MANDATED SYSTEM.

terms of cannabis-related crime has been on the other side of the border, with US Customs and Border Protection in Buffalo seeing a 140 percent increase in the amount of marijuana seized compared with the same time period last year.

Regardless of crime or taxation or price, industry experts argue that the legal cannabis market has to go further in offering something the black market cannot. All signs point to boutique sales and the emergence of "micro-growers" to

provide that difference.

Much like microbrewers in the beer industry, cannabis micro-growers can provide quality, flavors and effects not available from the dealer down the road. This is what Gourgen believes will raise the bar for Canadian—and global—marijuana.

"Micro-growers are popping up like crazy right now," Gourgen says. "There are some people who sing to their trees. They play Mozart at night and Beethoven during the daytime. In two years, you will be able to read a whole description about how this bud was grown, what the guy did to it, how he cared for it. You're smoking someone's art."

And while classical-music-inspired cannabis may not solve supply-chain issues, Gourgen and others believe an artisanal approach will command higher price points and encourage consumer interest. "There are \$1,000 bottles of wine," he says. "Why shouldn't there be a pot that was dedicated with so much work?"

"The world is definitely going to be disappointed for now [with supply shortages]," Gourgen adds. "They'll see that Canada's run out. But in two years, all the craftsmanship growers will be cultivating weed that has stories behind it." 🌿

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Tanya is committed to create a lasting relationship within the community, and her efforts to promote and maintain an industry standard of excellence are evident in every aspect of her business model.

We all know the potential for economic growth in the industry and look forward to becoming instrumental to its future. Cannabis has already been proven useful, helpful, and necessary for people from all walks of life.

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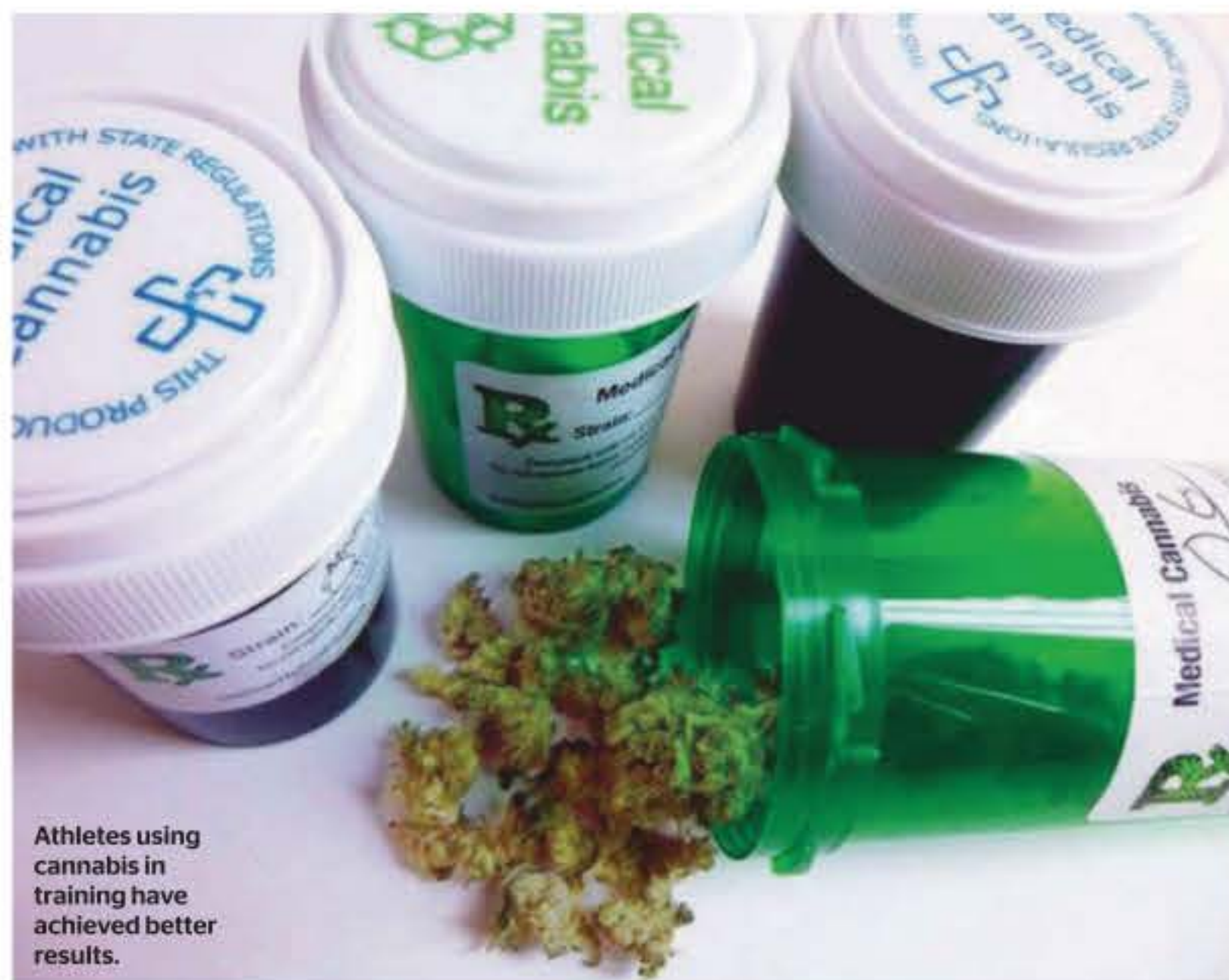
SPORTS & SPORT

EXPLORING THE ROLE OF CANNABIS IN ATHLETIC RECOVERY. BY ANTHONY RICCIUTO

THE STIGMA ASSOCIATED with marijuana, which once cast cannabis consumers as lazy underachievers, is now a thing of the past. Cannabis has slowly gained mainstream acceptance, even in athletic arenas, and for good reason.

Athletes in all sports, at all levels, are forever looking to improve their training recovery time. This is why they are constantly experimenting with new modalities to see what can enhance this very important part of their training cycle. And

for athletes looking to improve their recovery, cannabis has a lot to offer in more ways than one. As a sports nutritionist and strength coach, I have worked with over 100 world and national champions from a variety of sports including Olympic athletes and professional bodybuilders. I've incorporated cannabis into my athletes' training regimens with very positive results. Let's take a look at a few ways that cannabis can take an athlete's performance to new heights.



Athletes using cannabis in training have achieved better results.

CANNABIS HAS BEEN PROVEN TO IMPROVE SLEEP DURATION AND QUALITY OF SLEEP TIME AND TIME AGAIN. WHEN AN ATHLETE GETS A GOOD NIGHT'S REST, THEIR PERFORMANCE IS DRAMATICALLY IMPROVED. WHEN IT COMES TO IMPROVING SLEEP, I'M A BIG FAN OF INDICA-DOMINANT EDIBLES.

REDUCING PAIN

Without a doubt, cannabis is one of the most beneficial medicines for managing pain. Marijuana's medicinal benefits have been touted for decades as the herb helps reduce pain levels in those suffering from different issues, including fibromyalgia, arthritis, degenerative disk disease and much more. Those reading who are not serious athletes might not be aware of it, but competitive athletes are in pain all the time. The grueling training sessions performed multiple times a day can really take a toll on the body. When you are in the gym for three sessions per day preparing for competitions, you can bet that pain is going to follow. I am not talking about the pain that occurs during the session, like muscle burn when doing a drop set. I am talking about two specific types of pain that all athletes must deal with.

The first is delayed-onset muscle soreness. This will hit an athlete two days after a particularly strenuous training session. This is good pain, but it's pain nonetheless. After an intense leg workout, an athlete will limp around for a few days—and that is the norm day after day, week after week. By the

time they have healed up, it's time for another leg session, which keeps them in a constant cycle of soreness.

The second is old-man wear and tear. If you have been in any sport competitively for any length of time, you know that by beating your body down decade after decade, eventually it's not going to be so forgiving. The cartilage in a knee can wear down or an old shoulder injury will act up when it rains. Either way, the mileage you put on your body will show up in different forms, and this is why many athletes turn to nonsteroidal anti-inflammatory or opiate-based pharmaceuticals to help cope with the pain. But as we have seen over and over again, cannabis is a much healthier alternative to help alleviate the pain many athletes deal with on a daily basis.

SLEEP QUALITY AND QUANTITY

When it comes to recovery, the two biggest factors are optimal sleep and the current nutritional regimen. Cannabis can really help improve the quality of sleep for athletes. Muscle damage from a workout gets repaired during the sleep cycle—the body's cells are recycled and a cascade of different hormones is activated to produce muscle growth.

If your sleep time or quality of sleep is negatively affected, your rate of recovery will dramatically decrease. Many athletes also deal with insomnia due to nutrient deficiencies and the intense demands they put on their central nervous system.

An athlete's sleep can also be compromised when they're in a caloric-restriction phase prior to competing in combat sports or a physique event like bodybuilding. During this time, athletes might find themselves having difficulty falling asleep. Then, when they finally get to bed, they wake up a few short hours later wide-awake. Cannabis has been proven to improve sleep duration and quality of sleep time and time again. When an athlete gets a good night's rest, their performance is dramatically improved. When it comes to improving sleep, I'm a big fan of *indica*-dominant edibles. Nothing will help you get to sleep better than a high-THC *indica* in tincture form. My one issue with those cute little gummies and brownies most are familiar with is that I don't want my athletes consuming excess sugars and fats not accounted for in their nutrition plan. This is why I prefer medicinal cannabis tinctures, which I've found to be accurate in dosage and very effective.

SLUGGISH APPETITES

As I touched on above, the second factor to consider in recovery is proper nutrition. The problem some athletes face is not being able to take in enough meals per day to help them replenish what they lost through their training sessions. If you are not taking in the right amount of protein, fat and carbs to help this process, your recovery will be subpar. Cannabis can be quite helpful for those athletes that are having a hard time achieving the caloric requirements they need to reach peak performance.

Most of my athletes will consume between five to seven meals per day. When you get to meal number five and realize you still have two more to go, it can sometimes be a bit of a drag. Of course, these meals consist of the proper macronutrient layout, so it's not like an athlete can just go out and eat a pizza and wash it back with a Blizzard from Dairy Queen. Some athletes prefer a high-THC hybrid strain to help increase their appetite later in the day when they have lost the enthusiasm for another meal. Others use *sativa*-dominant strains earlier in the day to keep their appetite up all day long. There are other



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ways to simulate one's appetite, but cannabis's effectiveness is unparalleled (and preferred over pharmaceuticals known to increase appetite).

The difference between an athlete getting in all their prescribed meals for the day and missing out on the last two meals due to a lack of appetite is huge. It not only affects their recovery but also their performance during their next training session. This is yet another reason why cannabis is an important ergogenic aid, allowing athletes to consume optimal nutrients for peak performance.

SWELLING AND INFLAMMATION

Muscle, joint and tendon inflammation is another issue that all athletes deal with regularly. If you engage in contact sports like football or mixed martial arts, you will have even more issues related to inflammation. When you train hard, you are going to get injured—it's the name of the game. No matter how hard you try to stay safe, no matter how well your program is designed, no matter what body-therapy modalities you use regularly, injuries will find you. One example is tendonitis in different parts of the body. This is usually caused by overuse and allowing your body to stay in an

inflamed state for too long due to dietary and lifestyle choices. Anyone that has suffered from tendonitis knows that not only is it painful and restricts different movements, it also takes forever to heal. Consuming cannabis on a daily basis can help reduce this inflammation, especially when combined with a nutrition plan that restricts all foods that contribute to this process. This will include taking out all inflammatory markers from the diet like omega-6 fats, refined carbs and sugars. This will allow other rehab modalities like massage, active release techniques and chiropractic sessions to work that much better. Cannabis on its own will produce some amazing results in many aspects of an athlete's life. But when properly combined with the right holistic approach, it can truly be life-changing.

TENDONS AND BONES

One of the many benefits of high-cannabidiol (CBD) strains is the positive effect they have on healing tendons and bones. Not only is this shown in medical studies, but in the real world with the athletes I consult. One study in the *Journal of Bone and Mineral Research* demonstrated that CBD, when administered properly, helped to heal bone

fractures at a faster rate. The study even showed that bones were less likely to re-fracture in that same area. This is due to the direct action CBD has on inhibiting the G protein-coupled receptor 55. When this receptor becomes overstimulated, it can increase the transfer rate of calcium from bones into the bloodstream, leading to a softening of the bones and even contributing to such conditions as osteoporosis. CBD has been shown to prevent this, encouraging better bone density.

A world-champion powerlifter I worked with tore his bicep right off the bone. He had to have surgery to reattach the tendon, and he also had to have screws put into his inner elbow to hold everything in place. During this rehab phase, he consumed high-CBD, moderate-THC strains, microdosing several times per day using a dry-herb vaporizer. When he went back to the doctor four weeks after surgery, the surgeon was completely surprised at his healing rate. In fact, he was told that the progress he made in just four weeks was what most athletes saw at eight weeks after surgery. This is just one example of how cannabis and its medicinal constituents can help athletes recover faster from injuries, even tendon ruptures and bone fractures.

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TINCTURES



Like our oils, we carefully mix our oil base to create amazing topical products for relief of stress, pain or anxiety. These are one of the best ways to enjoy CBD products.

NEUROLOGICAL DAMAGE

One of the oldest lies we've been told about cannabis is that it will destroy brain cells and make you stupid. In fact, it does just the opposite. Neurogenesis refers to the growth and development of neurons in the brain. While scientists used to believe that this could not occur after the embryonic-development phase, they now understand that it still occurs even as we age. One of the most beneficial cannabinoids to help in this regard is THCA. Everyone is familiar with THC, but not so many understand the benefits of THCA. Also known as tetrahydrocannabinolic acid, this wonderful compound can have dramatic neuroprotective properties. One of the best ways to get in your dose of THCA is to juice your fresh flower instead of vaporizing it.

It is well known that cannabis has shown some real promise in treating symptoms of neurological conditions, ranging from Alzheimer's to multiple sclerosis to epilepsy. Scientists have found that THC and CBD not only reduce inflammation in the brain but also lower excitotoxicity, which is cellular damage in the brain when its receptors become

over-activated. This is why more and more NFL players are turning to cannabis to recover from brain trauma.

RECOVERY TIME

When it comes to methods to decrease the time between training sessions, I have had my athletes use just about everything available. The faster you recover, the more training sessions you can fit into a specific cycle, only to perform that much better on competition day. This is another area in which cannabis shines. I have found that my athletes (from a wide variety of different sports) recover much faster when using some form of cannabis compared with those that do not. I believe this is due to the multiple factors outlined above.

While many supplements and even performance-enhancing drugs have their direct purpose, cannabis seems to benefit athletes in many different areas. Some athletes don't recover from sessions as quickly as others. This can be due to factors like genetics, recovery methods, sleep quality, nutritional deficiencies and outside stressors. I have personally found that these athletes in particular gain a

huge benefit from dosing with cannabis daily. In fact, many athletes that would need 72 hours between training certain movements or body parts can reduce that period to 48 hours by using cannabis. That is a massive improvement. Reducing recovery time by a third really demonstrates the power of the plant.

As you can see, cannabis offers the competitive athlete some huge advantages in the area of performance recovery. It can help target not one but several different areas an athlete may need help in to truly maximize their rate of recovery. This is why I incorporate properly guided protocols for cannabis use with my athletes looking for that competitive edge (all my athletes that consume cannabis are legal medical-marijuana patients with a doctor's prescription and receive their medication from a licensed producer).

Not only does cannabis offer a proven, multifaceted approach to recovery, it is also completely nontoxic. If you are an athlete that has considered adding cannabis as an ergogenic aid to your recovery program, now is the time to experience it for yourself and take your performance to the next level. 🌿

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GROWRECROOM.COM

A close-up photograph of cannabis buds and leaves. The buds are covered in trichomes and orange pistils, set against a vibrant blue background. The leaves are green with serrated edges.

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BY DANNY DANKO AND T.H.CAECZAR




Mega Wellness OG
from Nameless
Genetics

NAMELESS GENETICS

namelessgenetics.com

Nameless Genetics hails from the San Fernando Valley of Southern California, a.k.a. "the Land of OG Kush." The company was established in 2015, but the Nameless crew has been collectively cultivating since the 1990s. They've retained and bred back their choice selections over time in order to stabilize multiple Cannabis Cup award winners such as the prized Mega Wellness OG and the flavorful Watermelon. Nameless seeks to please both the aficionado and the medical patient alike by providing strains covered in trichome glands that are filled with intoxicating essential oils. "We breed based off of terpene and flavor profiles, aromas, cannabinoid profiles, effects on the user, quality of flower, appearance and yields of each individual strain," Nameless tells *High Times*. "We're constantly striving to create cannabis that people can appreciate, love and remember. We're honored and humbled to be a part of the ever-evolving history of this inspiring plant."



Slurricane
from In-House
Genetics

IN-HOUSE GENETICS

inhouse-genetics.com

The best seed producers are always searching for new and interesting scents, flavors and potency profiles, and In-House Genetics leads the way forward by releasing unique cultivars in small batches. In-House specializes in feminized seeds, but provides some great regular seeds as well. The company has been micro-breeding for a little over 10 years, paying close attention to the details. This philosophy has resulted in some amazing limited-edition creations such as Afghanimal, Alien

Breath and Black Cherry Pie. In-House's Slurricane, an eye-candy cross between Purple Punch and Dosidos, is one of the strongest and frostiest varieties we've tried to date, and anything that its Platinum strain touches turns into an instant hash plant as well. New projects include infusing CBD into some of the more sought-after crosses along with special outdoor strains boasting high yields and mold resistance. "Shout out to E-40 and the Bay Area!" In-House tells *High Times*. "There's a lot more on the horizon, and we want to say thank you to everyone that has supported In-House Genetics over the years."



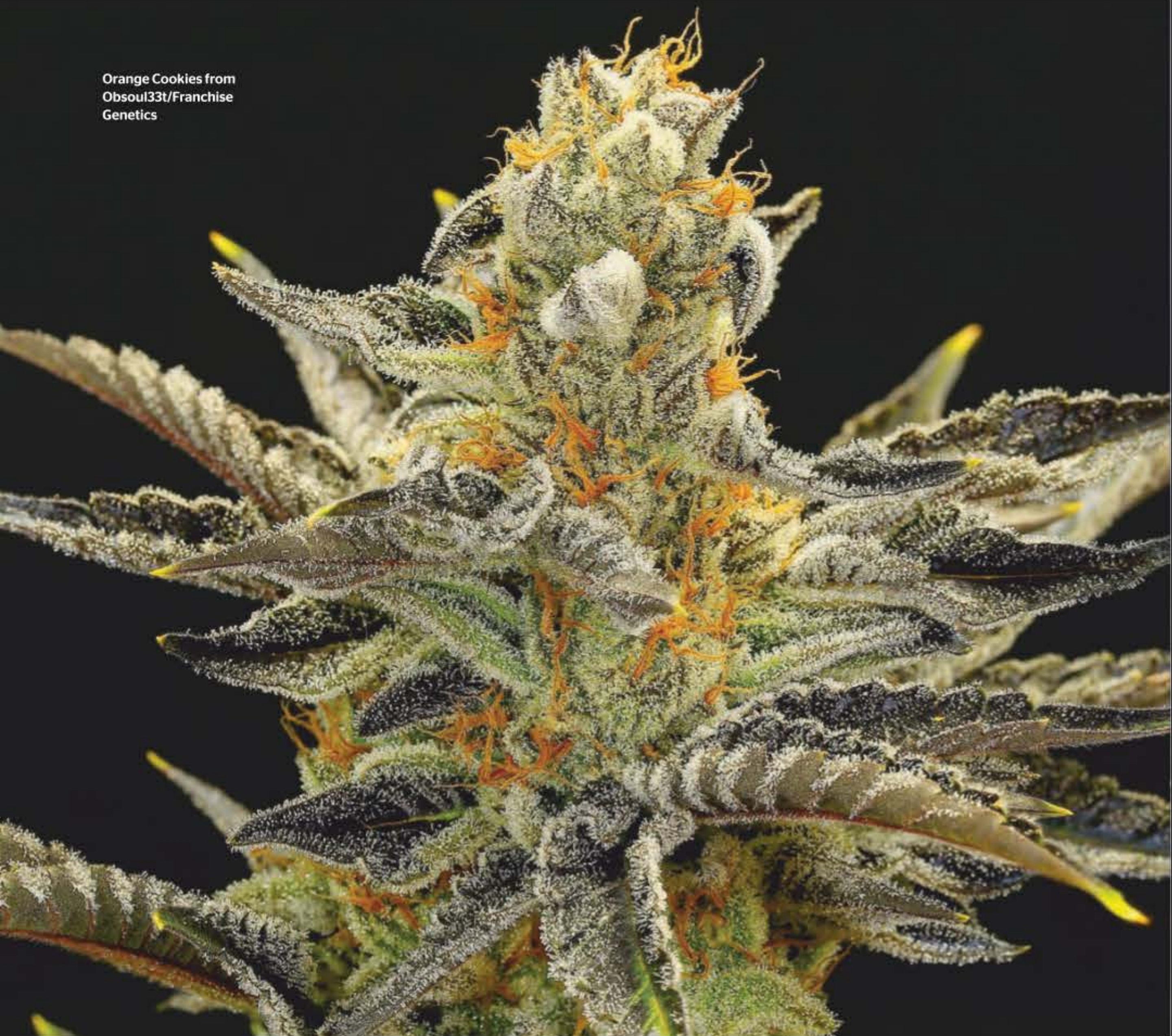
Miracle Alien
Cookies from
Capulator

CAPULATOR

Only available in person

In pot-nerd circles, 2018 has been referred to as the #YearOfTheMAC, and for good reason. The cannabis community at large first noticed Capulator in 2016, when a single 10-pack of M.A.C. seeds sold at auction for \$17,000! M.A.C., short for Miracle Alien Cookies, is officially classified as Alien Cookies x (Colombian x Starfighter), and, needless to say, it's making big waves on the sensi scene. Capulator's been around for over a decade on the online forums, and he's been producing seeds for about just as long. Other Capulator creations such as Legend Orange Apricot, Miracle 15, Freezer Burn and M.A.C. & Cheese are also in high demand, so be prepared to wait in long lines to access his limited supply of precious beans. Our advice is to keep a look-out for his highly underrated *sativa* crosses. Also check out Capulator's OG Biowar beneficial microbes (available at ogbiowar.com) if you want your M.A.C. to come out like his does!

Orange Cookies from
Obsoul33t/Franchise
Genetics



OBSOUL33T/FRANCHISE GENETICS

heavilyconnected.com

Franchise Genetics is helmed by Obsoul33t, a well-known breeder and preserver of rare strains who's responsible for some very important building blocks in today's cannabis gene pool. One particular strain, Alien Technology, which was reportedly brought home by a US soldier from the border region of Afghanistan and Pakistan, proved to be a pure *indica* cultivar prized for its breeding potential as a landrace male. Subsequent crosses include Alien Dog, A-Dub and the award-winning Orange Cookies, an outstanding variety rich in THC and other cannabinoids as well as flavorful terpenes. If you're looking for heavy resin production and that potent Kush punch, try some of Obsoul33t's tasty treats.

DYNASTY GENETICS

dynastyseeds.com

Professor P began his intensive breeding work in Oregon in 1996, specifically for the benefit of that state's medical-cannabis patients; however, the actual seed bank was launched to make the genetics available to the public in 2009. Strains such as Pineapple Fields, Oregon Huckleberry IBL, Platinum Huckleberry Cookies, Salmon River OG, Huckleberry Kush and Blue Magoo have made a name for Dynasty Genetics worldwide. The seed bank's transparent documentation shows parental selections made for stability, vigor and other desirable traits. Several High Times Cannabis Cup and Dope Cup wins with multiple strains solidify Dynasty's name as a go-to for connoisseur growers—not to mention, as the Professor says, "the culmination of over 20 years of passion, love and hard work!"

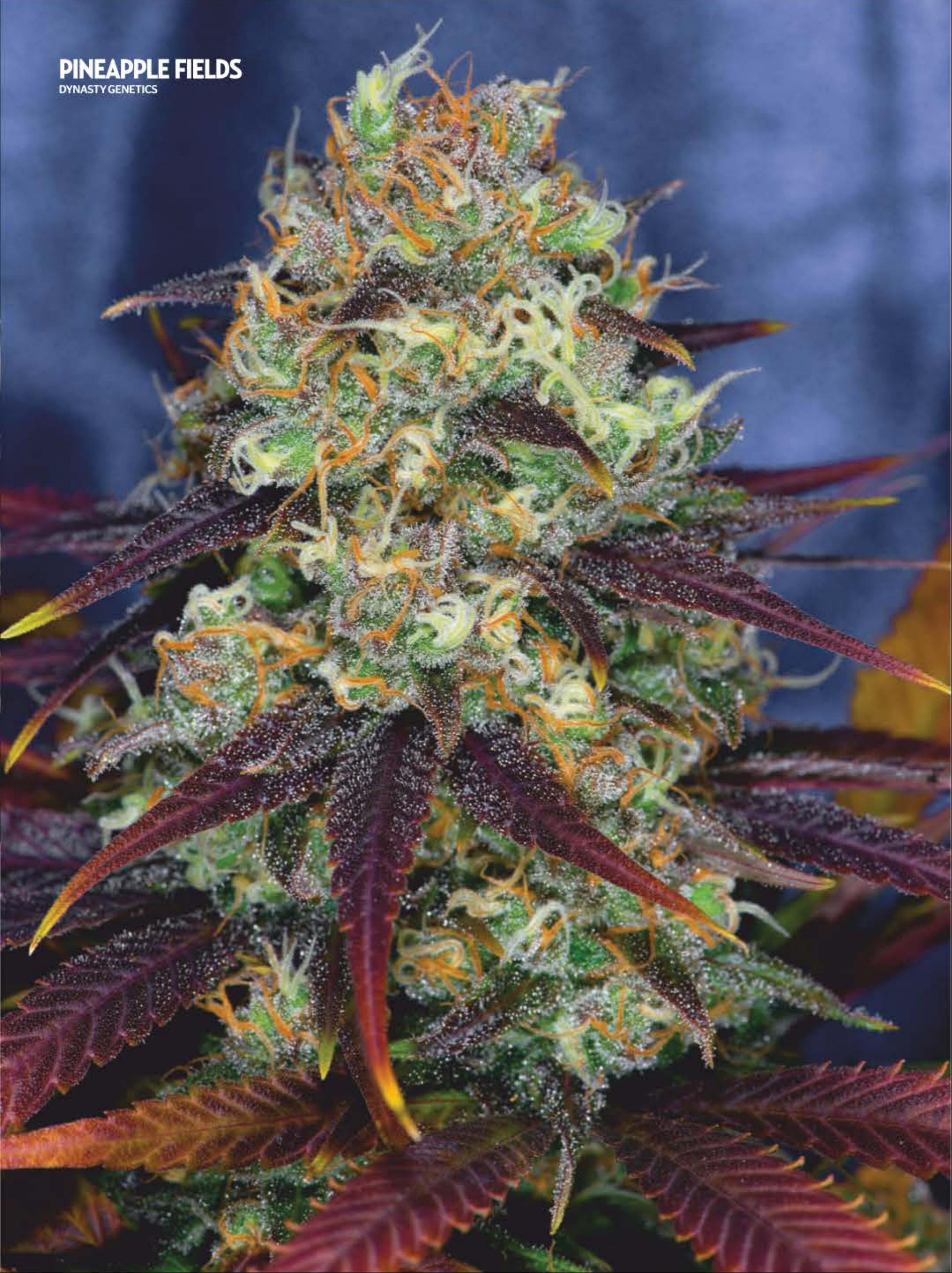
HUMBOLDT CSI

humboldtcsi.com

Using direct-sourced heirloom clones and carefully selected landraces to create solid hybrids with vigor such as Bomb Threat, Obama Kush, Sweet Pink Stink and Big Bad Wolf, the humble breeder known as Nspecta has developed into one of the most respected seed producers in the industry. His rich knowledge and expertise in cannabis attest to an upbringing among three generations of Northern California sinsemilla farmers and inform the genetic crosses made for his CSI Humboldt and Pirates of the Emerald Triangle seed lines. Nspecta offers both regular and feminized strains, and for 2019 he's partnering up with Painted Forest Organix to release ABC, or Australian Bastard Cannabis, procured and collected from "down unda."

PINEAPPLE FIELDS

DYNASTY GENETICS





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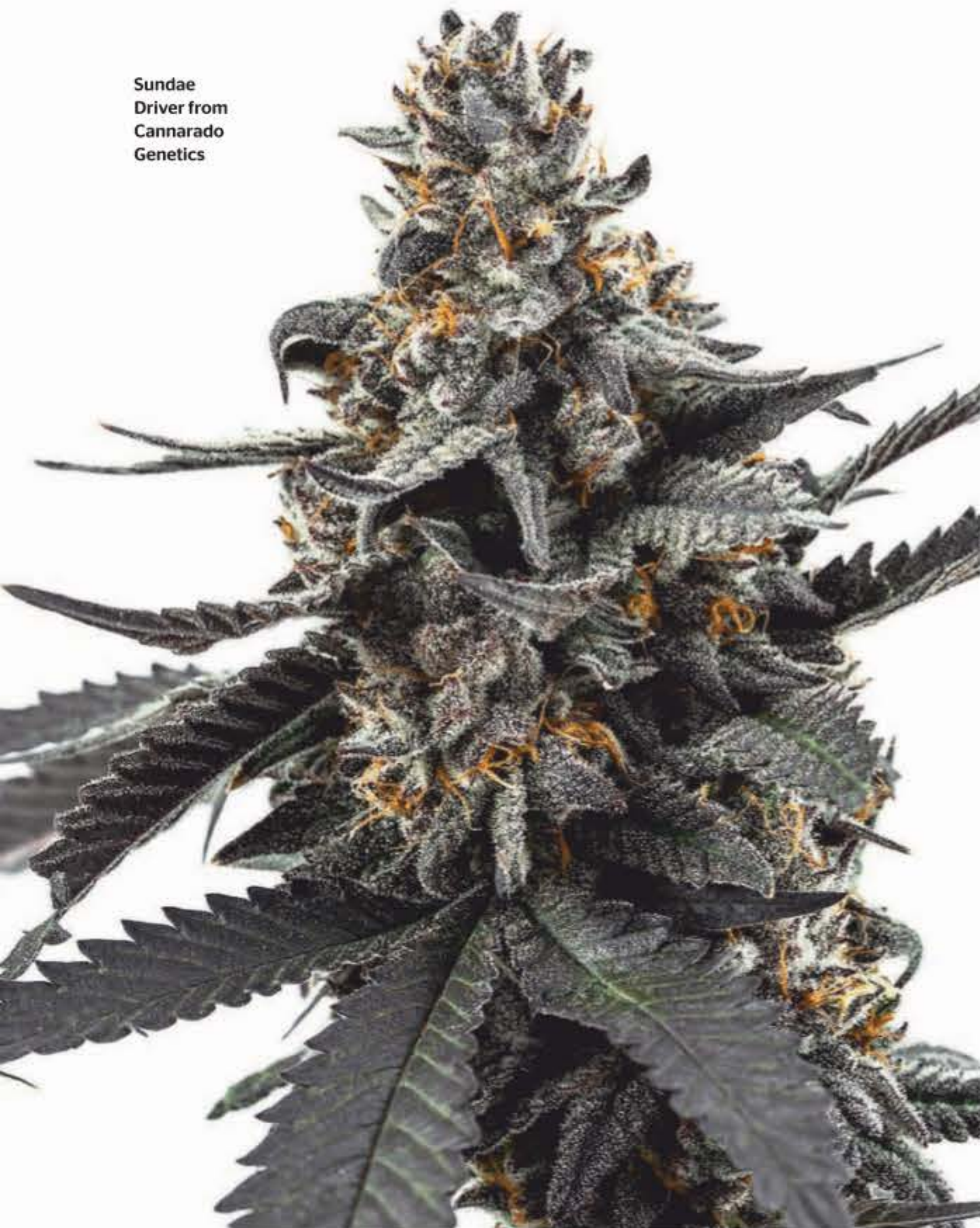
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| A ₁ | | Bhang | | Bhang | V ₄ | | Bhang | |
| Bhang | N ₁ | | B ₃ | | B ₃ | O ₁ | L ₁ | D ₁ |
| N ₁ | | Bhang | H ₄ | Bhang | R ₁ | | Bhang | |
| W ₁ | A ₁ | N ₁ | N ₁ | A ₁ | #bhangvibes | | | |
| | B ₃ | | N ₁ | | | Delicious | | |
| Uplifting | I ₁ | | G ₂ | | | Premium | | |
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Sundae Driver from Cannarado Genetics



CANNARADO GENETICS

radogear.com

After making its first cross 20 years ago, Cannarado Genetics is becoming a household name in the world of seed-collecting cannabis growers. Cannarado has bred several award winners, including TK91, Mother Pucker and Fatso, but it's best known for Grape Pi—a parent of Sundae Driver, Wedding Pie, Lava Cake, Pie Hoe and many other delicious strains. Cannarado seeks to "Make America Grape Again" with highly anticipated seed drops that sell out lightning fast. Cannarado's recent collaboration with Phinest Cannabis in California boasts a tissue-culture lab for successfully preserving, growing and breeding from strains produced from a single plant cell! Be on the lookout for something Cannarado's dubbed "synthetic seeds"—tiny tissue-culture clones, encased in gel and about the size of a small grape.



Wedding Cake from Seed Junky Genetics



Green Crack from Humboldt Seed Organization

HUMBOLDT SEED ORGANIZATION

humboldtseeds.net

Founded in Northern California, HSO is a group collaboration between growers and breeders with over 20 years of experience in the heart of the legendary Emerald Triangle. With its global headquarters in the Basque Country of Spain alongside its partners at Dinafem, HSO provides high-quality elite genetics to a worldwide audience. The company specializes in feminized and auto-flowering seeds as well as CBD-rich versions of California classics such as Blue Dream and Green Crack. "Searching for new and interesting terpene and cannabinoid profiles leads us down a path of endless exploration into the depths of this powerful and sacred plant," HSO's head breeder tells us. "We're forever committed to the evolution and progression to providing and creating the highest-quality cultivars to the international cannabis community."

SEED JUNKY GENETICS

neptuneseedbank.com

After producing seeds behind the scenes for almost 10 years, Seed Junky has made a huge public splash in a relatively short time. He's created some celebrated crosses such as Jungle Cake, Animal Mints and Lemon Meringue Kush Cake, but his most successful project to date has got to be the ridiculously popular Triangle Mints, one pheno of which was later renamed Wedding Cake. This phenomenal OG and Cookies cross delivers in every way—visual appeal, aroma, taste, efficacy and high yields. As good as Wedding Cake is, though, Seed Junky said he's moving on to Kush Mints—which he finds to be even better than Wedding Cake, if you can believe it—for further breeding projects. We're looking forward to seeing what the future has in store from Seed Junky!

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Tropic Lightning
from Ocean
Grown Seeds



OCEAN GROWN SEEDS

oceangrownseeds.com & lumberjackseedsource.com

In the early 2000s, OGS founder Vader's passion for breeding, trading and collecting strains was evident on the fabled Overgrow online cannabis-grower forum. When that venue was unfortunately shut down, Ocean Grown Seeds emerged in the California medical market with a focus on elite clones and hybrid breeding projects with superb results. Strains like Alien Rift and Tropic Lightning showcase Ocean Grown's dedication to the development of the highest-quality cannabis genetics and its access to SoCal's finest breeding material such as OG Kush, SD Bull Rider and Black Widow. "All of our seeds are handcrafted in small batches by artisan breeders to ensure optimal outcomes," Vader tells us.

PREVIOUS INDUCTEES TO THE HIGH TIMES SEED BANK HALL OF FAME!

2007: The Initial 10 Inductees (plus five defunct pioneers)

Sensi Seeds/Sensi Seed Club
Flying Dutchmen
Paradise Seeds
Reeferman Seeds
Soma Seeds
Green House Seeds
Sagarmatha Seeds
T.H.Seeds (originally CIA/KGB)
Legend/DJ Short
Serious Seeds

Esteemed Pioneers Emeritus

Sacred Seeds/Cultivator's Choice
The Seed Bank
Super Sativa Seed Club (SSSC)
Lowlands Weed/Seed Company
Positronics

2009 Inductees

BC Bud Depot
Big Buddha Seeds
Barney's Farm
Delta 9 Labs
DNA Genetics
Vancouver Island Seed Company
Next Generation Seed Company
Dutch Passion
High Bred Seeds
Subcool Seeds/TGA/The Green Avengers

2012 Inductees

Dr. Greenthumb
Cali Connection
Mandala Seeds
Resin Seeds
Dinafem
Magus Genetics
Chimera Seeds
Mr. Nice Seeds
Homegrown Fantaseeds
Bonguru Beans

2014 Inductees

La Plata Labs
Rare Dankness
Karma Genetics
Grand Daddy Purp Genetics
Elemental Seeds
Archive Seed Bank
Loud Seeds
Devil's Harvest
Hortilab Seeds
MTG Seeds

2017 Inductees

Exotic Genetix
Bodhi Seeds
Top Dawg Seeds
Brothers Grimm Seeds
Swamp Boys Seeds
3rd Generation Family/Terp Hogz (Dying
Breed Seeds)
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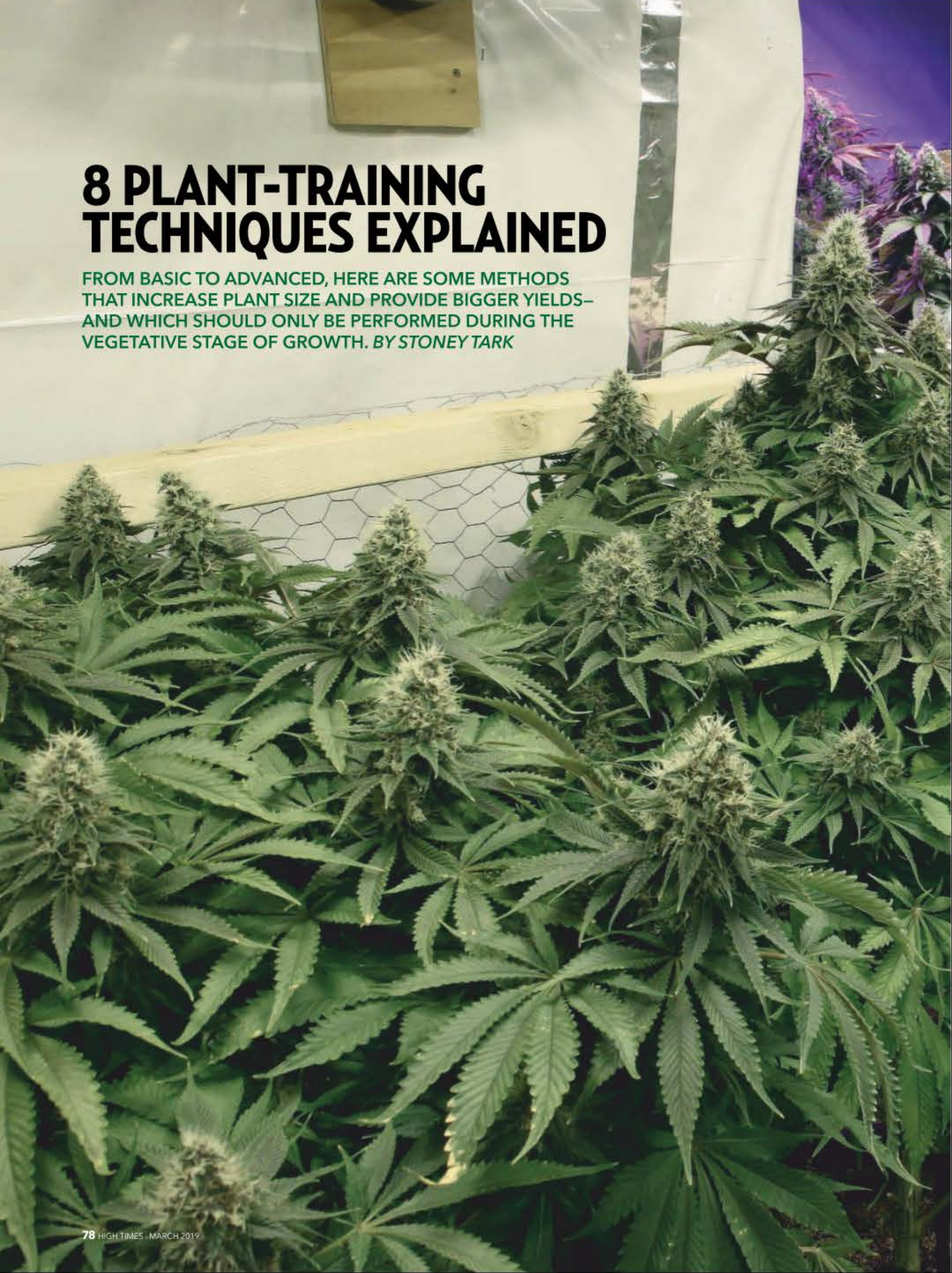
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8 PLANT-TRAINING TECHNIQUES EXPLAINED

FROM BASIC TO ADVANCED, HERE ARE SOME METHODS THAT INCREASE PLANT SIZE AND PROVIDE BIGGER YIELDS—AND WHICH SHOULD ONLY BE PERFORMED DURING THE VEGETATIVE STAGE OF GROWTH. *BY STONEY TARK*



Well trained plants yield far more than those left to their own devices.



TOPPING

Removing the main crown shoot of your growing tip will ensure that two new shoots will grow back in its place. Pinching out once will create two tops; pinching out twice will create four tops; and so on. This technique is as simple as cleanly removing the growth tip until a lighter, fleshy-colored part of the plant tissue is exposed.

This will heal over and then form new growth shoots. It is very important to create a clean cut to avoid "fimming" (see below). I personally like to use a clean pair of nail cutters and to really get in and cut as close as possible. When incorporating a screen into the garden, topping is essential in creating a symmetrical canopy base from which to work.

BENEFITS: A plant's height is basically cut in half—instead of one tall plant, the plant is separated into two parts. With this technique, the growth hormone that is responsible for apical dominance—in which a plant's central stem is dominant—is cut off and a new hormone is emitted that promotes lateral growth. When the canopy is pinched out until the plant is flat-topped and multi-branched, canopy control is at its maximum.

Topping plants out will produce a greater number of smaller-size colas, as opposed to a main cola with supporting side branches if left untrained. This technique is ideal for growers who have limited space and want to avoid tall, lanky plants, and those growing plants with long vegetative periods, as this technique will produce a vibrant plant with eight heads in about 4-5 weeks.

FIMMING

When fimming, 80 percent of the crown shoot is removed, with a very small amount left behind. In response, the plant will cease to produce upper growth, focusing its energy on the rest of itself underneath the highest part where it has been firmed. Growth at the low part of the plant, from the very base of the pot and each internode upward, will increase, creating a thicker-looking plant. To use this technique, simply take a pair of scissors and snip away three-quarters of the tip of the crown shoot of the main cola or on the top shoots of the supporting side branches. "Fimming" is short for "Fuck, I missed!" because the technique was discovered by accident.

BENEFITS: Plants will have time to focus on enhancing the growth tips that are below the firmed shoot. The lowest buds will have a chance to catch up with the rest of the upper growth, so when the top shoot does grow back to normal, the entire plant has increased in size. Fimming can create really bushy plants, and it can help avoid weak-producing lower buds.



SUPER CROPPING

This is my favorite technique for pushing my plants to the limit. It's a hands-on high-stress method that involves breaking the inner cell walls of a branch by popping it between your fingers. When successfully performing this technique, you'll be able to hear an audible snap as the plant's inner walls collapse—or at least feel a change in the pressure inside the plant.

With young softwood plants, popping the center parts of each internode will suffice; however, with plants that are more woody, it's much easier to twist and bend, and there's a quicker healing response.

BENEFITS: If you have ever seen a plant that has an almost-round, knuckle-shaped growth forming over a bent branch, it's been super-cropped. Once the inner cell walls in a branch collapse, growth hormones are sent to the break.

The result is a hardwood, protective growth that will not only provide added support, it will also boost the plant's vigor and ability to respond to stress. A plant that has been super-cropped will be noticeably stronger in terms of vigor, stature and overall yield.

TIE AND BEND

Otherwise known as low-stress training (LST), this technique involves tying and bending certain parts of the plant at certain times to compel the canopy to grow symmetrically. This technique involves tying the plant down with string or metal cables and lowering the highest point of the crown shoot. The plant will respond with the rest of the growth tips now competing to produce the main cola. Through careful calculation and planning, a grower can simply use leverage to compel the plant to form into a short and stout bush in which the main cola is unidentifiable come flowering time.

BENEFITS: The benefit of LST is that the canopy will be round with heavy side branches. Additionally, as the plant grows sideways, the axillary shoots that would've once produced small flowering sites will not grow upward and toward the light.

The end result comes down to how many times the plant's been tied down to create new vertical shoots. This technique is also very important when using a screen, and it's a great way to make those once tiny nugs into main colas.

Top: Cutting off growing shoots promotes lower growth. **Middle:** Super cropping requires some branch twisting. **Bottom:** This hybrid variety reacts well to tying and bending.



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Screens provide a trellis for branches to fill.

USING A SCREEN

Referred to as screen of green or ScrOG, this technique involves the application of a screen or net to act as a trellis through which your upper canopy will grow while clearing away the lowest part of the plant below the screen, ensuring a maximum yield of symmetrical flowering sites.

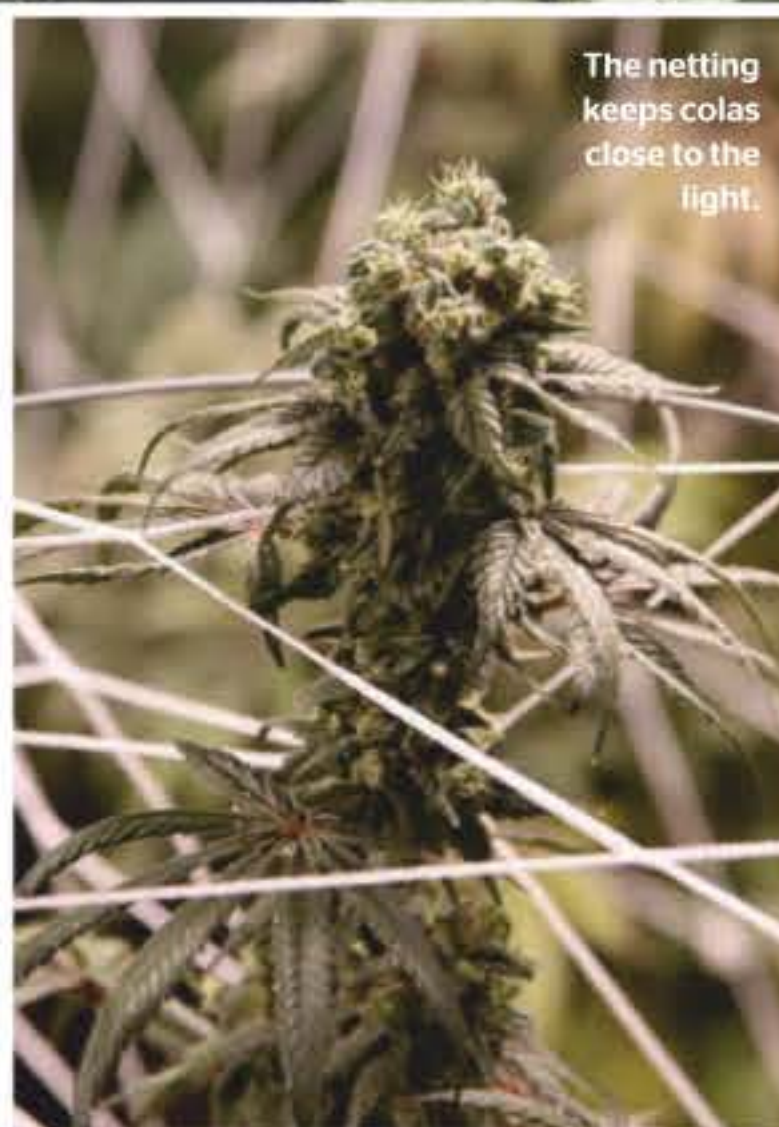
This method requires longer vegetative times than other plant-training techniques, as selected shoots must be fed through the screen over the growing phase. Making a screen is as simple as laying chicken wire over a wooden frame, tying bamboo shoots together in a square formation or even using wire or pea netting.

BENEFITS: Using a screen not only allows the grower to be totally hands-on with his plants; it also allows those with very small plant counts to achieve large yields in a small grow space. The plants have no choice but to dedicate all their growth above the screen, resulting in no low-hanging schwag buds and improved air flow below the canopy.

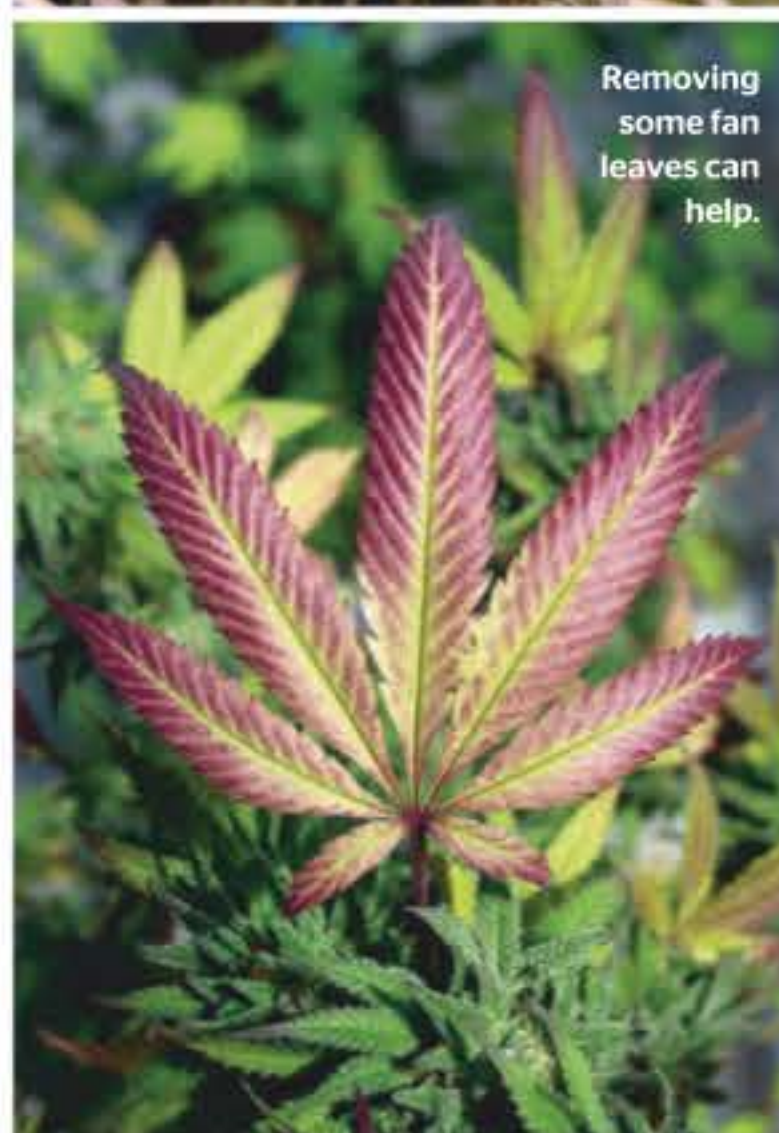
PRUNING

Getting rid of fan leaves and low-growing tips is something that all growers should consider doing, but only at the proper time. Plants use their energy on whatever growth there is, so knowing when to cut away and strip the parts that are less productive than the upper parts is important. Take a pair of scissors and, as if you were taking clones, cut away the lowest growth of the plant that will take away from the prize buds you desire.

You should cut away everything from side branches to big healthy fan leaves. A good rule of thumb is to remove around 60 to 70 percent of the growth from the base of pots upward. You can also use your finger and thumb to strip away from the branches. Be



The netting keeps colas close to the light.



Removing some fan leaves can help.

vigilant to check for any new growth forming where the pruning took place.

BENEFITS: During the flowering stage, plants will exhibit the lollipop effect, where the main central stem has been stripped bare under a healthy, vibrant top canopy. If you don't prune the lowest parts of the plants, you'll always struggle with the low-producing, light-deprived growth.

By clearing away a large proportion of the lowest plant parts, you can be assured that during the blooming phase the plant's energy is being used as efficiently as possible and is focused on the heavy nugs on top. Pruning can make a big difference in the overall production of a cannabis plant, ranging from flower size to overall consistency.

MAINLINING

This technique is slightly more complicated than traditional low-stress training, and it focuses solely on symmetrical plant growth. The principle behind mainlining is to remove the top shoot and all of a plant's lower growth to create a bare stem. This allows the two axillary shoots to grow upward to form two primary shoots. If you picture a capital-Y shape and then grow from this starting figure, you can then tie the two shoots down to allow them to grow in a letter-T figure.

BENEFITS: Although it can seem like a very stressful training method and can certainly feel counterproductive, the important thing is to stick with it. Due to a carefully arranged symmetrical design, the plant will send signals to each pathway to make sure that each bud flowers and grows the same as all the others. The end result can be very impressive, but keep in mind that this method is for more experienced gardeners and requires much patience.

STRIP AND FLIP

This method involves pruning away everything underneath the top internode of the plant's branches a few days before flowering. This focuses all the plant's energy into the remaining nodes. A full-scale prune can be quite drastic, and it's the last thing anyone would do to their precious plants, yet this technique works. What's left is a very skinny-looking structure with only one top shoot, but when it flowers it grows quite top-heavy.

BENEFITS: This technique removes the risk of any lower-producing popcorn nugs, provides an excellent opportunity to take some healthy cuttings for future grows, improves air flow and reduces insect and pest infestations. The flowers that the plant produces will be thick and dense. The end result will be uniform nugs that are each around 3-5 inches in size with substantial biomass.



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Using proper techniques, growers can produce plenty of flowers with fewer plants.

TOP TIPS ON PLANT COUNT

LARGE PLANTS

Growing large-size plants that take up quite a bit of room requires long vegetative periods to produce as much productive foliage as possible. One can argue about which method produces larger yields: one large plant or many smaller plants under the same grow light. My tip here is to dedicate a grow tent for one or two very large plants. Avoid vegging many plants in a tent as they'll fight for light and overshadow one another as blooming commences.

LIGHT OUTPUT

You may have purchased a 10-pack of the latest and greatest genetics, and although you calculate that planting 9 seeds under a 600-watt lamp will result in a 9-ounce yield, it really depends on the integrity of your lighting setup. Grow lights are measured in lumen count and photosynthetic active radiation (PAR). My tip here is to find out the amount of PAR your lights are emitting, then work out if it's adequate enough to produce heavy-yielding plants.

SEA-OF-GREEN METHOD

This method requires very short vegging times and a quick introduction to flowering.

The principle behind SOG is to grow as many small plants as possible in a limited space. The turnaround time may be a week longer than the flowering period for commercial growers. Make sure the strain you're growing is well suited for a SOG grow (such as a short-flowering *indica*-dominant variety) to make the process as straightforward as possible.

STRAIN SELECTION

There are many varieties of cannabis on the market these days, each displaying traits of *indica*, *sativa* or a mixture of both. Growing *indica*-dominant varieties will allow a grower to produce smaller-size plants. Hybrids can extend taller, and *sativa*-dominant strains will tend to stretch out even more. My tip here is to learn as much as possible about the strain you're growing. It can determine a short or long vegging period, as well as if SOG or ScrOG is the right method to use.

SKILL LEVEL AND EXPERIENCE

If you're new to growing cannabis, it's better to grow a few smaller-size plants at first to learn the ways of the plant. If you're more experienced, then generally having a larger plant is the norm, and the level of plant training that can be provided will result in a huge difference in terms of canopy control and final yield. A shorter vegetative time is more forgiving to the beginner, providing less time

to make catastrophic mistakes. Grow according to your skill level in terms of plant count, strain selection and nutrient use.

BUDGET

Your plant count and vegging time may be limited due to your budget; for example, electricity costs soar during the longer 18-hour lights-on periods. You may also be limited in nutrients and prefer to flower as soon as possible to save more during the growing stage. You may also be restricted to pot size, lighting capacity and many other things due to financial restrictions, so plan ahead to spend and grow within your time and financial constraints.

VEGGING ROOM

For growers who have a vegging tent and a flowering tent, growing larger plants is probably not necessary, as a constant rotation of smaller-size plants is beneficial and practical. Invest in a tent solely for growing seedlings and clones until they are mature enough to be transferred to the flowering tent.

With the above options for training your plants, you'll be able to find a technique that is well-suited for your individual space, time and financial considerations. Experiment and have fun—when harvest time comes around you'll have some dank nugs to celebrate with and begin to plan your next grow! 🌿

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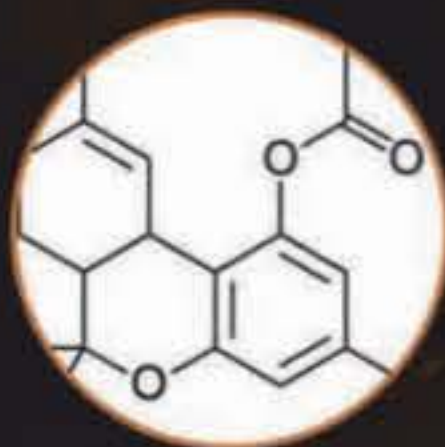
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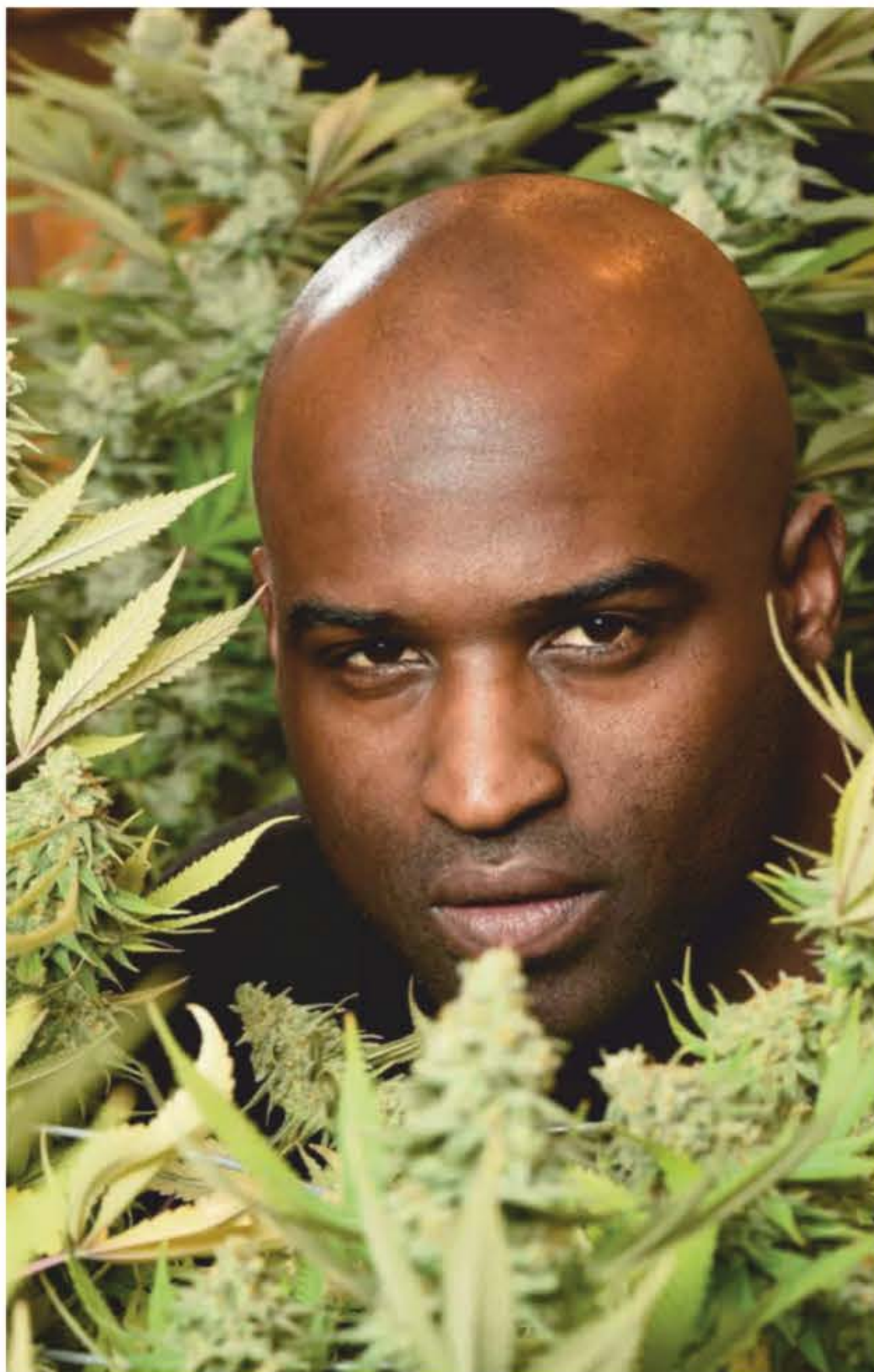
RICKY WILLIAMS

THE HIGHTIMES INTERVIEW

AFTER A REMARKABLE COLLEGE FOOTBALL CAREER THAT CULMINATED IN WINNING THE HEISMAN TROPHY IN 1998, RICKY WILLIAMS ENTERED THE NFL. WHILE HE FOUND SUCCESS ON THE FIELD IN THE PROS, HE ALSO BATTLED ANXIETY AND DEPRESSION. AFTER LEAVING PROFESSIONAL FOOTBALL, WILLIAMS EMBARKED ON A QUEST FOR KNOWLEDGE, STUDYING ALTERNATIVE HEALING AND ADVOCATING FOR CANNABIS. HIS UNIQUE BACKGROUND AS AN ATHLETE AND A HEALER LED WILLIAMS TO START HIS OWN CANNABIS LINE WITH THE GOAL OF OPENING MINDS AND CONNECTING PATIENTS TO THE WORLD AROUND THEM.

In 1999, the New Orleans Saints gave up all of their picks in order to draft you fifth overall in a historic trade. You were the only draft pick for the team that year. What kind of pressure comes from something like that?

I'm sure there's a lot of pressure that came with it, but, at least at the time, I wasn't really aware of it. I wanted to be the first pick. Back in 1999, it was the Cleveland Browns' first year back in the NFL as an expansion team. They had the first pick. And so I saw being the No. 1 pick and going to Cleveland as my path. But I wasn't the first pick—I fell all the way to the fifth pick. It was a little bit devastating for me. It didn't really dawn on me—the massive trade and what it meant—until much later. The pressure I always put on myself to perform tends to be greater than any kind of pressure people on the outside could put on me. I really didn't feel excess pressure from the pressure that I typically put on myself.



You were coming off a legendary career at the University of Texas. But in the pros, you began experiencing social anxiety and became known for your postgame interviews in which you wore your helmet and visor. When did you first start feeling anxiety in those situations?

I first started feeling anxiety almost immediately when I started dealing with the NFL. I guess, looking back, that probably should have been a clue that [professional football] might not be the path for me. I remember going to the NFL combine and just feeling grossly misunderstood. You mentioned the University of Texas and everything I did there. I think I was still a weirdo, but in college, you're a kid and people look at you and treat you [that way]. At Texas, it felt like a big family where, for the most part, we accepted each other for who we were. I got into the NFL and I realized that people had a certain idea of who I was supposed to be and how I was supposed to behave that didn't seem very interesting to me. I kind of went through an identity crisis of trying to figure out, am I who I think I am, or am I who everyone is telling me I'm supposed to be? That created a lot of anxiety for me. As I was wrestling with this tension, I remember it was during training camp, and we were in Wisconsin at the time. There was a light rain after practice and I was injured, so I hadn't been playing or practicing, and the media wanted to talk to me. I was walking to a covered area, and before I even got there, someone in the media kind of yelled at me to take off my helmet. I've got a bit of a rebellious streak, so when they said it, I kind of thought, I haven't even gotten under the thing, and you guys are yelling at me, treating me like a puppet. So I said, "What's the big deal if I leave the helmet on?" For that whole season it stood, partially as a rebellious act against the



Williams has extensively studied alternative healing methods.

I STARTED READING THIS BOOK ON AYURVEDA, AND IT JUST BLEW MY MIND. HERE WAS THIS COMPLETELY DIFFERENT WAY TO LOOK AT THE BODY AND THE MIND THAT MADE MORE SENSE TO ME THAN WHAT I HAD LEARNED GROWING UP.

idea that the media or that the fans want me to be something and aren't willing to actually see who I am underneath the helmet.

That's really interesting because it was so widely reported that the helmet/visor was related to social-anxiety issues. But you're saying it was really more of a rebellious act?

Yeah, at the same time, because part of the anxiety was an inner rebellion that took a while to come to the surface and for me to actually act on it. But the signs were there from the very beginning that the NFL might not be the place for me.

You were using Paxil to treat anxiety—and you even did a campaign for the drug. How did you first end up using marijuana to treat symptoms of anxiety?

I remember we'd just finished a season—I think it was the 2000 season—and I had since recovered from wearing the football helmet. It was the following year, and I got off to a really good start that

year, and I ended up breaking my ankle in the 10th week of the season. I kind of went into the tank because I had finally proven to myself that I could play in the NFL, and then I had this injury. And again, these ideas of, is this really what I want my life to be like, always trying to prove myself? And so I started, again, questioning—is this really who I am? And another symptom was I didn't really feel like being around other football players. I felt like we didn't have very much in common, and I just felt like an outcast. I was at home watching TV one day, and there was a commercial for Paxil and it started listing symptoms of social-anxiety disorder. It probably listed seven or eight symptoms, and I identified very strongly with three or four of them. So I started seeing a therapist, and she put me on Paxil. Who knows if the Paxil helped? For me, what was powerful was knowing that there was something that I could do about it.

So around the same time, I was living with a teammate

of mine, and he was a smoker. We would get together and roll up and we'd smoke, and we'd talk. At this time, I'd never really even heard of medicinal marijuana. I grew up, my auntie smoked. It was around. That was just something you do. I didn't look at it as being a bad thing, but I also didn't realize that there were potential benefits from it. As I was smoking more and more, I started to ask myself different questions and look at the world in a different way. Parts of me that I'd never really knew existed, or I had long since buried, started to come back to the surface. It was almost like it allowed me to give myself permission to consider doing something other than playing football.

I don't really get into the details of whether cannabis can treat mental-health disorders. What I do know for sure is that using cannabis helped me look at the world in a different way, which opened possibilities and doors that I didn't even know existed. My classification of that is more of a spiritual type of medicine. Something that gives you a broader perspective and allows you to see things differently. And in my path, in studying different healing modalities, other than the Western healing modality, I learned the main disease we have is a lack of connection to the universe or to spirit.

You've extensively studied Ayurveda and yoga. What led to your interest in alternative healing?

It all started around the same time. As a football player, I was noticing when I go on the football field, everything is good. I'm talented. I know how to handle myself. I know what to do. But at the same time, my personal life was really a mess, and I felt the opposite. The question I kept asking myself was: I wonder what I'd have to



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THE HIGH TIMES INTERVIEW

change in my life for my personal life, my life off the field, to be as vibrant, as successful, as my life on the field? It was almost as soon as I started asking these questions, things started to change. I started to look at things differently. And so when I decided to retire from football in 2004, I wanted to travel. I wanted to experience different things. As I traveled, certain things would land in my lap, and a book on Ayurveda was one of those things. At this time, I was dealing with some residual injuries from playing football, and so part of my journey was looking for ways to help myself feel better physically and emotionally.

So I started reading this book on Ayurveda, and it just blew my mind. Here was this completely different way to look at the body and the mind that made more sense to me than what I had learned growing up. So when I got back to the States and realized, I'm not a football player anymore, I have to find something to do, I decided to start studying Ayurveda. I found a program in Northern California, moved up there and started studying.

As I studied Ayurveda, one day I was in class, and someone asked a question about cannabis. The teacher explained, "What the Buddha said is that anything can be medicine, and anything can be poison." And he started to share his story of his personal use of cannabis, and he said, "I don't use it every day, but if there's a problem or something that I just can't seem to figure out, I'll use some cannabis, and it helps me see things differently." As I studied further, I realized that they've been using cannabis in Ayurveda for over 2,000 years. So at least the internal stigma in my mind started to break down, and I started to realize all of these disparate pieces of my narrative are all starting to come together.

While I was studying Ayurveda and studying not only cannabis, but the other 150 herbs that they use in their pharmacopeia, it struck me that I'm in a state where I could get a [cannabis card]. So I got my rec and I got a couple of pounds of flower, and at the time I was working in the herb lab at the Ayurvedic school, and so I would bring home different herbs, and I started playing around in my kitchen, creating herbal formulations for myself and for my friends, combining these traditional Ayurvedic formulas with cannabis. It really opened my mind, considering my history as an athlete and taking Advil or Paxil or taking other different pharmaceuticals that, yes, provided some relief, but also a lot of side effects, and altered my ability to function. I just kept exploring, and through that exploration I found yoga, I found meditation and I found all these different things. What I wrestled with inside was that we're taught cannabis is bad, but my experience with it is it goes extremely well with all these other things that I'm doing. I just further started to free my mind from these ideas of what we've been taught, of what cannabis is and what cannabis isn't.

You obviously had a lot of trouble with the NFL's cannabis policy—you mentioned at one point that pot cost you roughly \$10 million when you factor in salary, fines and endorsements. How do you view its current handling of cannabis? Do you feel like it's improved?

I will say it has improved. But I think for the most part, everyone's had to improve. An example is when I got in trouble with the NFL, they were testing for THC metabolized at 0.15 nanograms per milliliter, which I think is pretty close to the lowest that you can test legally. They've now bumped it up to 0.5 nanograms per milliliter, and the significance of that is both of my failed

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tests were under 0.5 but above 0.15. So if I were playing in the NFL now, I wouldn't have even failed the drug test and been in the drug program. So there definitely have been improvements. The other side is once you get into the drug program, essentially they treat you like you're a criminal. In the drug program, I had to call the NFL and tell them whenever I was leaving town, I had to give them the date that I departed, the time that I arrived, my address and location so that they could test me any time they wanted. And I had to see an addiction specialist, once a week. That was for two years.

I think the NFL has improved. But at the end of the day, the program is you get tested once a year in the off-season between April and August, and then if you pass that one test, there's no more tests the rest of the year. So for all intents and purposes, if players take a break or find a way to pass that test, they're

free to smoke during the season. So you could make the argument that the NFL is lax. The other side of the argument is the NFL is a powerful corporation that carries a lot of clout, and if they did modify their approach more significantly, it could create a lot of change in the world.

You started your own cannabis business, Real Wellness, based on your unique background as an athlete and a healer.

Yeah. My idea of entrepreneurship is seeing where there's a need somewhere and using your individual abilities, talents, perspective to fill that need. I started speaking at cannabis conferences a few years back, just telling my story. Quite naturally, after being onstage on a panel or as a keynote, I'd walk the floor and meet different vendors and different people, and I kept being approached [about starting a business]. I started to think about my background

and realized there's a void for truly medicinal-marijuana products right now. With my background in herbalism and Ayurveda and Chinese medicine, I have access to formulas and ideas to actually start creating products for people where they can practice medicinal marijuana. I realized there's something here. My personal experience, after studying alternative medicine, was that I found ways to take care of myself and realized I could do a much better job keeping myself healthy than the doctors could. A large part of that was using different herbal remedies, my yoga practice, my meditation practice, and realizing that we all, with a little bit of education and consciousness, can find ways to take care of ourselves.

Where can people find Real Wellness products?

Right now we're only in Southern California dispensaries. In the RW line, we have

several products that have THC and CBD, among other medicinals. We also have CBD-only products, which are available online and in dispensaries in Southern California. But right now we're currently in conversations with manufacturing partners in other states so that we can get this product in patients' hands.

I'm 41 now, and I look at my past and ups and downs. To me, I'm in a place where I can turn all that stuff into value, not just for myself but for other people. So starting a brand is really mainly a way to get my message out, that this is a plant that's really contributed to my life and opened my mind to a lot of things. I just see the world being a better place if people's minds are more open. Real Wellness isn't just about eating organic food or exercising. It's about your perspective. And your ability to feel connected to your life and the world around you. 🌱

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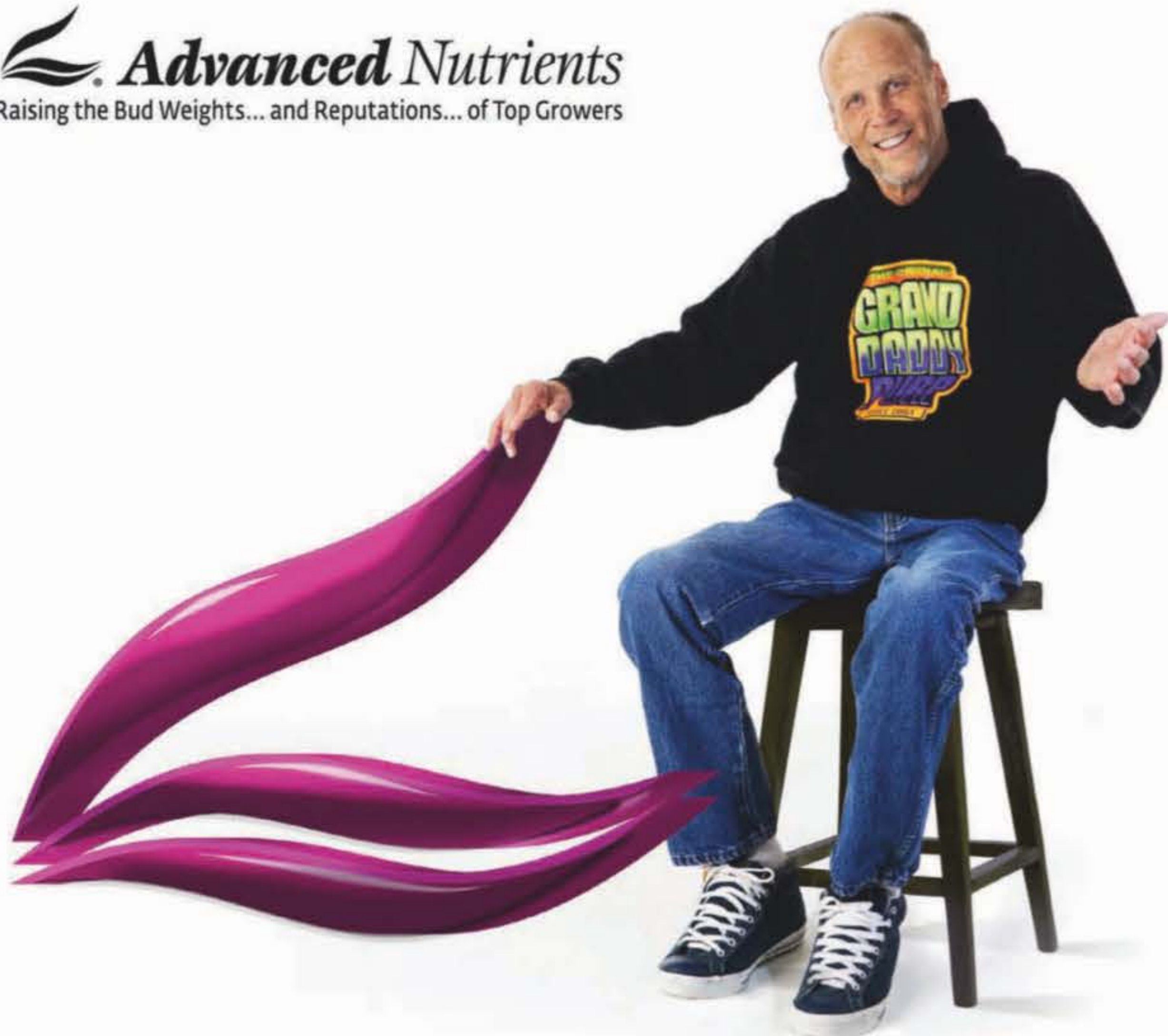
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Nic Easley knows the cannabis world.

INSIDE THE CANNABIS INDUSTRY: NIC EASLEY OF 3C CONSULTING

A US AIR FORCE VETERAN WITH MORE THAN 15 YEARS OF AGRICULTURAL EXPERIENCE AND A DEGREE IN BIOLOGY AND ENVIRONMENT STUDIES, NIC EASLEY SERVES AS CEO OF A LEADING CANNABIS STRATEGY FIRM THAT HAS EXPANDED INTO 30 US STATES AND 13 COUNTRIES. EASLEY SAT DOWN WITH *HIGH TIMES* TO DISCUSS VETERANS' ACCESS TO MEDICAL MARIJUANA, THE KEYS TO INVESTING IN POT AND THE FUTURE OF THE CANNABIS INDUSTRY. BY SEAN COOLEY

How did you first get involved in the cannabis industry?

I'm originally from farm country in Wisconsin; I later joined the Air Force, got hurt and wanted to go somewhere that was pretty and chose Colorado in 2006. Cannabis was legalized medically for disabled vets. I tried it, and liked it. I really love agriculture and plants and started a little company on that side of things that's now turned into the larger consultancy that we do nationally and internationally as well as venture-fund management. Through 3C, our goal has always been to make this industry better, using profitability and investments to do so. We're now working in six continents.

How important is it for veterans to have access to medical marijuana?

I mean, for veterans to be able to have access and a care plan with medical marijuana, we've got a long way to go. What I found in using it myself, is that in the military, you have to take prescriptions as often as you take direct orders. So when you're out of the military, and when you're able to buy your own alternatives to painkillers, you still have a fear of turning to cannabis. For example, you might lose all your VA benefits or risk missing out on job opportunities. In the military, you're really taught a camaraderie and to focus when you're fighting for something that's important. So that's

something I take seriously when it comes to cannabis legalization and helping veterans to retrain and live in a world where pharmaceuticals are the only viable option.

You mentioned the cannabis industry has hit a point where it's time to "grow up." What do you mean by that?

A lot of it has to do with regulatory and compliance issues. We have to take it seriously, we have to represent something that's bigger here, a bona fide industry. So if you're running an edibles company, it means having everything be food-grade—commercial kitchen, grease traps, ventilation—everything.

Field research



We're in the unique position to start and shape an industry based on something that's so important to people's lives and had been illegal forever. That's why we've got to grow up [and do it right].

What excites you most about the cannabis industry at the moment?

So what's really interesting to me is the international scene and the investing opportunities—those companies that are doing it for the right reasons, that do this

AS AN INVESTOR, AVOID HUNTING FOR UNICORNS OR ONLY LOOKING FOR SHORT-TERM, MINI RETURNS. YOUR INVESTMENTS IN THE CANNABIS INDUSTRY SHOULD BE LONG-TERM.

as their business, that were patient and focused. Those international companies are probably what excites me most.

In terms of international lessons, can you point to one country in particular that you think is in the vanguard?

So the country that has the

glass ceiling that's the shiniest and distracts everyone is Canada. They have some very good regulations—they're allowed to export, they're allowing a public market for investors, and it's created a frenzy there. But Canada's cold, and with these giant greenhouses, how well can they service the world with

that higher cost of capital?

Israel set a phenomenal framework initially; more and more it's adhering to US regulations—the difference-maker is that there's science there. It's just that's the most amazing, truly medical market that there is in the world, and we use medical as a way to essentially legalize quasi-adult use in most US markets. I say that loosely, but Israel set a very good, medically focused clinical-research regulated program.

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NIC EASLEY OF 3C CONSULTING



Easley speaks to the press at a cannabis convention.

is Colombia. For a grow environment it's nice, based on its latitude/longitude.

Do you have any tried-and-true cannabis-investment advice?

As an investor, avoid hunting for unicorns or only looking for short-term, mini returns. Your investments in the cannabis industry should be long-term. Find the right private and public companies; you want to invest in and prepare to read and hear a ton of speculation.

If you're looking to diversify your portfolio, it's the private funds that are best. I would recommend that you read a lot about the companies, understand if the public company is going public or staying private and why. Don't just base your selections on what's hot on... some blog site.

Find people in the industry you trust—those who know the industry, who are credible, competent and can manage investments. Do the companies you're looking at have the right capital and burn rate to grow in a structured way?

Like all investments, pot investments carry risk, but when they're spread across multiple companies that are qualified already, that's where you'll find the best selection that's most likely to secure returns.

Do you have a favorite product or way to consume?

Call me old-school, but you know, a good flower joint is just spectacular every once in a while. When you lead investor meetings, it's a little more practical than crushing dab rigs. I'm on to some of the newer vaporizers that are not using dangerous types of metal atomizers and oils that don't add glycol to their viscous solution or flavor additives or fake terpenes.

I like the edibles companies that are doing very standardized products. Take Coda for example, a Colorado company with an amazing line of chocolates. They put out lines that are standardized and beautiful and they're never too strong—that "more is more" mentality—or leave you feeling sick.

You've traveled extensively as a consultant. Do you have a favorite smoke spot?

Always compliant ones, of course, though around the rim of the Grand Canyon after hiking to the bottom would be nice. I started in Colorado, I have a lot of companies based out of California, [and] my favorite spots carry that peace of mind whenever I can smoke cannabis that was purchased legally, with taxes paid and tracked and funding schools and contributing to a good economy. From there, it's consuming at an event that's permitted, with other consenting adults and not having that stigma of "adult stoners in the corner," but rather social acceptance without having to be paranoid about any prosecution or judgment. 🌿

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INTERVIEW

We went to visit an up-and-coming facility in Colorado that has really caught our attention by disrupting the current clone market. We had a chance to sit down with the owner, John Paul, in order to learn more about this rising company.



INTERVIEWER: So what is Klone?

JP: Klone is a genetic facility that is focused on high-end cultivars. We started it because we realized there wasn't a place in Colorado that could provide commercial clones that were clean and healthy. We noticed there was a large gap in the genetic marketplace and we knew we could be the ones to fill it.

INTERVIEWER: Why do facilities turn to you for their genetic needs?

JP: We have all types of clients. Some are trying to revamp their genetic catalog, while others are just

getting started and need a jump start to hit their canopy needs. Some companies don't have a propagation department of their own, so that is where we come in.

Interviewer: How many Klones can you produce a month?

JP: We can produce up to 40,000 clones per month.

INTERVIEWER: I see you have an excellent lighting setup, can you talk a little bit more about what you are using?

JP: We use mixed spectrum lighting here at Klone. We

currently have the Sun System DE Boss reflectors being used in concert with Sun System commercial LEC 315w fixtures in order to provide both UVA and UVB. We use SSI controllers with this equipment, which allows us to go from 180-850 PPFD. We love this setup as it allows us to give our plants the lighting they want throughout all stages of growth.

INTERVIEWER: Where did you source your equipment from?

JP: We get all of our equipment from Agron.io. They have the best prices and excellent customer service.



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#BirdieBrownOG R1 (feminized)
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DEAR DANKO by @DannyDanko




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SUBJECT **Mixed-Up Seeds**

FROM **Uncle Buck**

👋 Hi, Danny—please help! I've accidentally mixed my seeds, both autos and feminized. I have managed to separate them by size. Now I have three normal-size and nine small grey ones, and I have no idea which are which. Additionally, I don't know how many of each I originally had. Cheers from Australia!

Dear Uncle Buck,
The size of the seeds will not tell you which are auto-flowering and which are feminized. You must plant them and grow them out to determine which are which. The ones that begin to flower regardless of the amount of light they receive are the autos. The others will be the feminized ones. Good luck!

Grow out your plants to fruition in order to discover their true potential.

Danko Tip: Intake fans for fresh air should be installed low in your room, and, because heat rises, exhaust fans should be installed near the top.



A cellular cutting is suspended in agar in the tissue culture lab at House of Cultivar in Seattle.

SUBJECT: **Vegetative Stage**

FROM: **Martha M.**

🌱 How do I know when plants are in the vegetative stage? I'm new and I don't understand all the growing terms. Thank you!

Dear Martha,

There are two main stages of cannabis plant growth: the vegetative stage and the flowering stage. These stages represent the different growth patterns of annuals from spring into summer and then into fall, when the plants reach maturity. When a seedling sprouts, it enters the vegetative stage, during which it grows branches and leaves. Outdoors, as summer ends and light begins to diminish, the plant enters the flowering stage, during which it slows branch and leaf growth while focusing its energy on producing male or female flowers in order to fill up with seeds before it dies with the first frost of winter.

Indoors, we re-create these seasons using a timer into which we plug our grow lights. For vegetative growth, we provide our plants with 18 or more hours

of light per day. When we decide to induce flowering, we cut the light cycle to 12 hours on and 12 hours off per day. The plant will then transition from the vegetative stage to the flowering stage and begin its march to harvest.

SUBJECT: **Preserving a Strain**

FROM: **Charles T.**

🌱 My question is in regard to the preservation of a strain that has been reduced over time from environmental or genetic drift by using colloidal silver to produce feminized seeds. I'm talking about an incredible strain that I obtained through clippings when it had already been cloned many times and has since been cloned many more times. My biggest concern comes from the difficulty I'm lately having getting this strain to root during the cloning phase. I'm waiting on a shipment of 120 PPM colloidal silver; once it arrives, I plan to begin my first feminized-seed project. I would like to know what I should expect from the seeds produced. Will they also have difficulty rooting, or should the

genetic blueprint be completely restored? Thanks for any help you can give me!

Dear Charles,

You are embarking on an interesting but difficult breeding project. You're planning to spray colloidal silver on your female flowers in order to force them to show hermaphroditic tendencies and induce "male" flowers to form within them.

The pollen from these flowers contains no male genes, so this should result in females or hermaphrodites. When this pollen is spread onto the same female flowers, it's called "selfing," or creating an S1. If all goes well, the resulting seeds will be similar or identical to the original clone-only plant.


A different way to bring back the vigor of the original hybrid is to use a tissue-culture technique. This is similar to cloning, but on a smaller, cellular level. Once a plant has been duplicated with tissue culture, the resulting cuttings will be free of any pests, pathogens, diseases or other issues that result from stress, such as difficulty rooting or a general lack of vigor or potency.

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DEAR DANKO

Danko Tip: Calibrate your pH and PPM meters monthly in order to ensure they're working properly.



Two seedlings emerge from one bean.

SUBJECT: **Twins!**

FROM: **UP Grower**

Hi! We love reading your expert grow advice in *High Times*. We've been growing in Michigan for about six years and have used both seeds and clones. We recently purchased some feminized Gelato seeds, one of which sprouted twins! (Included is a photo you can publish to show what we mean.) We've never seen this mentioned in *High Times*. Is it a rare occurrence?

Dear UP,

Thanks for the kind words! Your plants are exhibiting a common mutation called polyembryony, in which two or more embryos exist inside one seed. Thus, like identical human twins, the seedlings that emerge will be exact copies of each other.

SUBJECT: **No-Till Tent**

FROM: **Giggle Grassachusetts**

Greetings again! I've been wanting to create a no-till living soil (teeming with worms and microbes and using soil blended with compost). I have a 2' x 2' and a 2' x 4' tent. Is this possible?

If so, do you have any recommendations as to what to use to hold the soil? I have found a few fabric containers, but they have compartments. Do I need to build my own container? I'd prefer to use fabric instead of wood. Also, would it be a bad idea to bury compostable kitchen scraps in the soil? Thanks for the awesome podcast!

Dear Giggle,

No-till farming is a very interesting growing concept in which soil is left undisturbed and organic material is added on top. Compost and other natural soil enhancers are piled on, and cover crops such as clover are grown and gently mixed into the top layer of soil in order to avoid destroying the beneficial mycelia that permeate the medium.

No-till growing can be accomplished in beds, boxes or fabric containers in even the smallest of spaces, but the important thing is to avoid adding any nonorganic or toxic nutrients or pesticides to your soil mix. It's better to put your kitchen

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DEAR DANKO

Danko Tip: Use a timer to turn off CO₂-supplementation equipment when your lights are off.

scraps into your compost bin or pile in order for them to heat up, break down and cure, rather than adding them directly into your soil. Thanks for your support of the *Free Weed With Danny Danko* podcast!

SUBJECT: **Don't Overfeed!**

FROM: **Peter G.**

Remember the good times from three years ago on the 420/710 catamaran cruise? This is Pete, who was disgusted with the Amsterdam Cup the previous year. You said you remembered me, but I don't know how because you obviously come into contact with many people.

Anyhow, I'm happy to report I'm four weeks into flowering a spectacular Acapulco Gold grown in coco under LED and fluorescent lighting to limit my power footprint. She's looking great despite the lighting limitations. I'm alternating nutes and water every fourth day, and it seems to be working great. This way I'm not overwatering or overfeeding.

I switched to a 10/14-hour light/dark photoperiod from a 12/12 cycle a week ago as advised by Jorge Cervantes in his *Cannabis Encyclopedia*. The branches have just started to sag from the bud weight, and I'm now staking the plant to relieve any stress. Maybe next time I'll just go with SOG netting, but it didn't seem feasible to go that route in a closet. I really don't have a question, I just wanted to reach out and say thank you for all the great advice you give in your column.

Dear Pete,

Wow! Thanks for reaching out and thanks for the tips on properly feeding your plants. Overfeeding and overwatering are the two biggest mistakes made by beginner growers, and it's always best to err on the side of caution as you describe. I'll have to do a bit more research on the 10/14-hour photoperiod you mentioned because I haven't heard of that being used before, unless it's to save money on electricity or to reduce heat at the canopy level.

SUBJECT: **Wet and Dry Cycles**

FROM: **Humdrum Bum**

I'm about to start a RDWC (recirculating deep-water culture) six-bucket system, which does not allow the plant's roots to receive a dry period. Is the dry period important, or will plants thrive with the proper amount of oxygen?

Dear Humdrum,

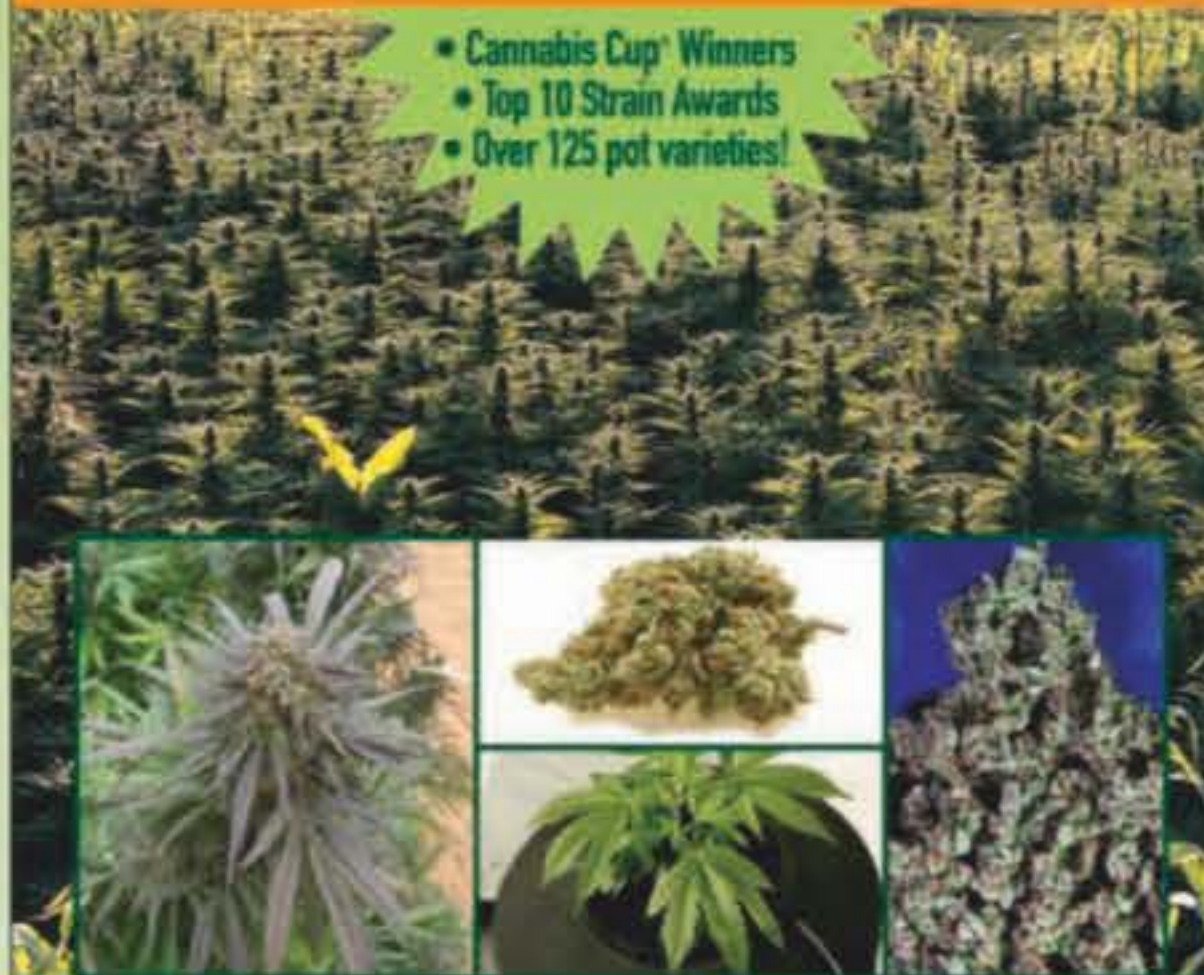
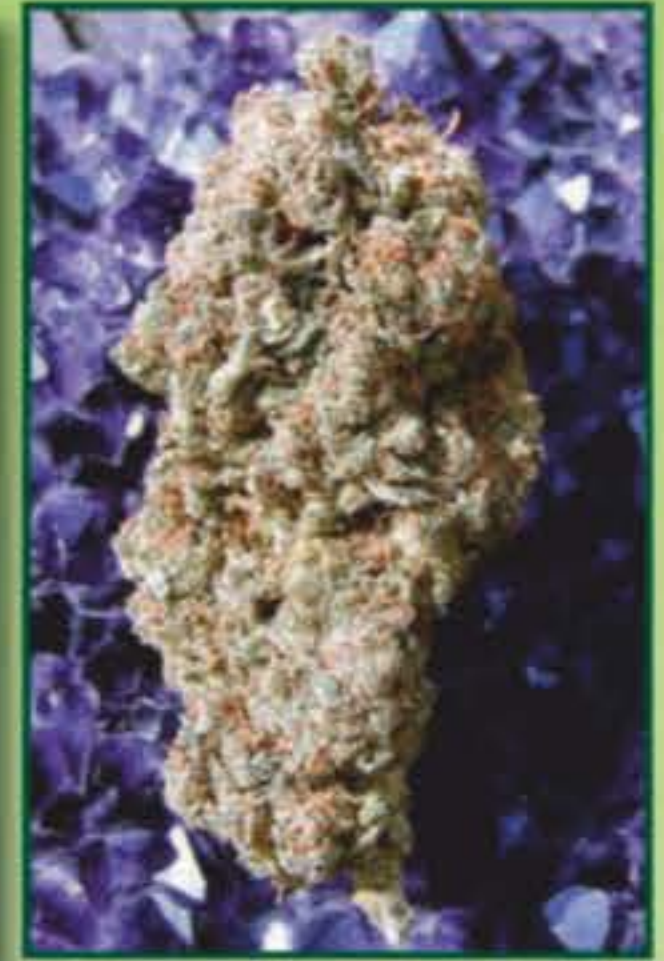
The wet/dry period relates to growing in a soil or coco-based mix. With most types of hydroponics, the nutrient solution is so well oxygenated that the roots can handle not drying out; in fact, they must remain moist at all times.

Deep-water culture relies on the roots dangling into an aerated solution so they have access to water, food and oxygen at all times. This mist feeds the roots and allows the plants to exhibit explosive growth rates. The important thing is to always keep the solution at the right temperature, pH level and PPM levels of nutrient salts in order for the plants to thrive. 🌱

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4 READY, SET, GROW!

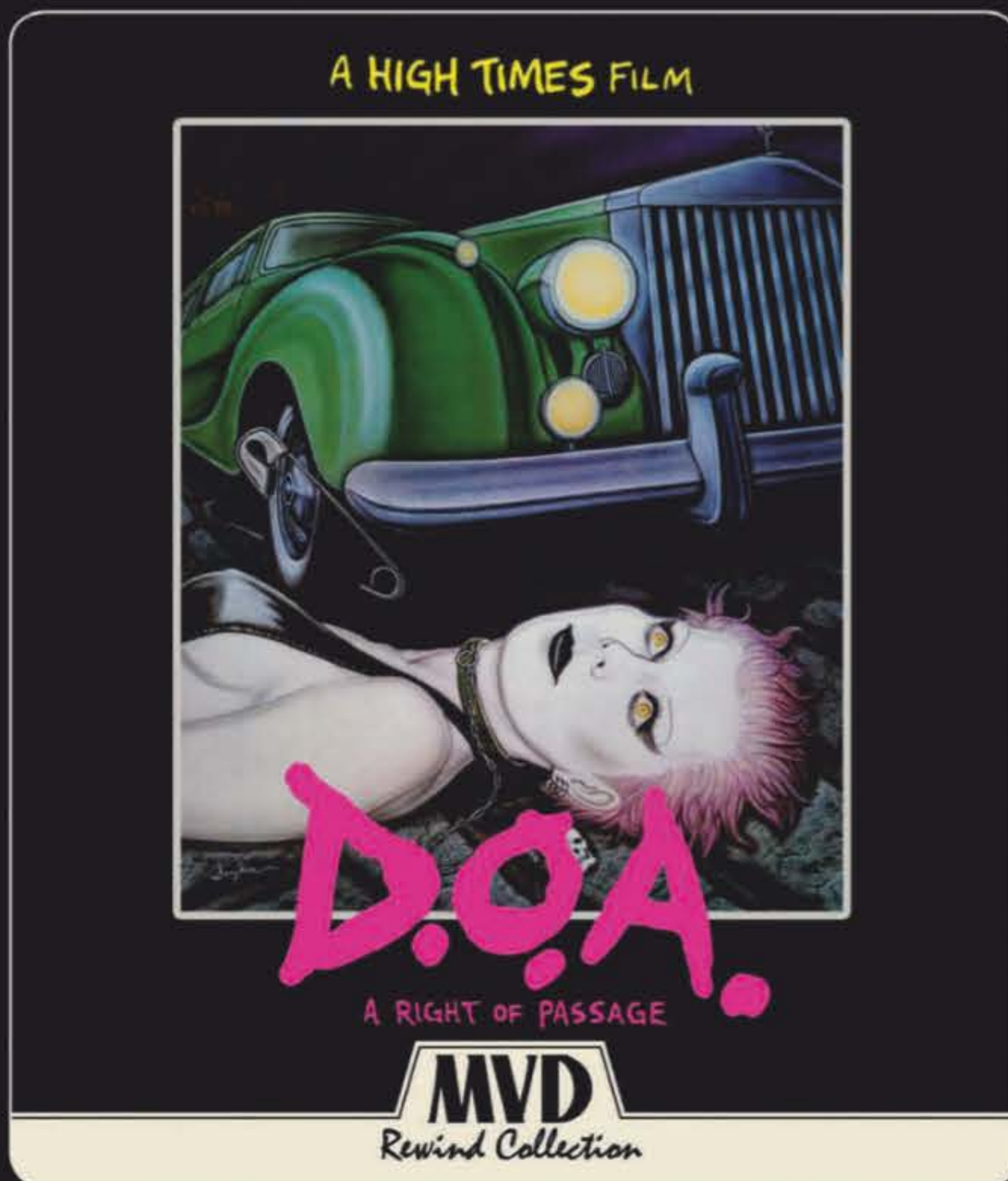
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IN HONOR OF Canada's historic legalization of recreational cannabis, nothing seems more appropriate than to celebrate with a homemade cannabis-infused maple syrup. Make your own delicious syrup at home and take your next breakfast or brunch to a whole new level!

The use of Rick Simpson Oil (RSO) in this recipe works particularly well as it adds a deeply herbal, almost spicy counterpoint to the sweetness of the syrup, as well as allowing for the easy and effective incorporation of THC and/or CBD (depending on the cannabinoid composition of the oil you choose) into your food at your preferred dosage. However, you can also substitute the cannabis concentrate of your choice for this recipe.

Tip: Keep a careful eye on the sugar while it cooks throughout this recipe, as it can quickly turn from caramelized to burned. Continually

swirl the pan and monitor as it heats, and make sure to wear heat-resistant gloves to protect your hands and forearms from hot splatters. 🌿

INGREDIENTS

½ cup granulated sugar
1 cup brown sugar
1 cup boiling water
1 tsp. buttery spread
1 tsp. maple extract
¼ tsp. liquid sunflower lecithin
1 gram RSO (or activated/decarboxylated cannabis concentrate of choice)

DIRECTIONS

Pour the granulated sugar into a heavy skillet. Next, cook the sugar over medium heat, watching carefully until it starts to melt and turn brown. Swirl the pan or use a silicone

spatula to gently scrape the liquefying sugar from the sides of the pan.

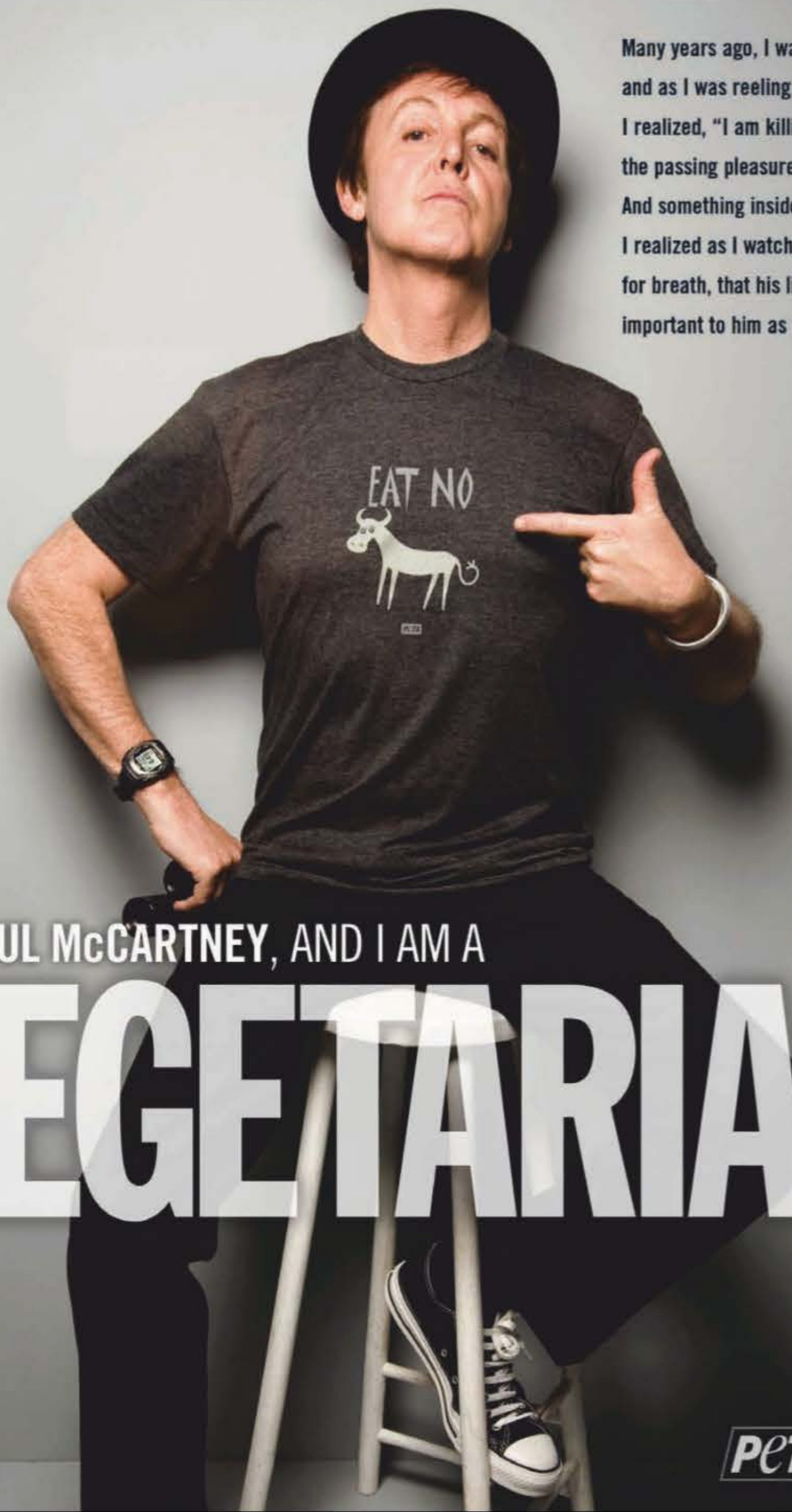
Remove the pan from the heat immediately after the sugar turns into an amber liquid. Add the brown sugar to a heavy saucepan. Next, pour the boiling water over the brown sugar and let the sugar dissolve without stirring.

Add the caramelized white sugar to the melted brown sugar in the saucepan. Simmer, stirring frequently until the mixture thickens to a syrupy consistency. Remove the pan from the heat and whisk in the buttery spread, maple extract, RSO and liquid sunflower lecithin.

Serve immediately, or store up to two weeks in the refrigerator in an airtight glass container. (If stored, heat the syrup to room temperature or warmer before serving to make it pourable, as it thickens in the fridge.)

Photo by 2001 PETA Communications, Ltd./Max Vukobrat

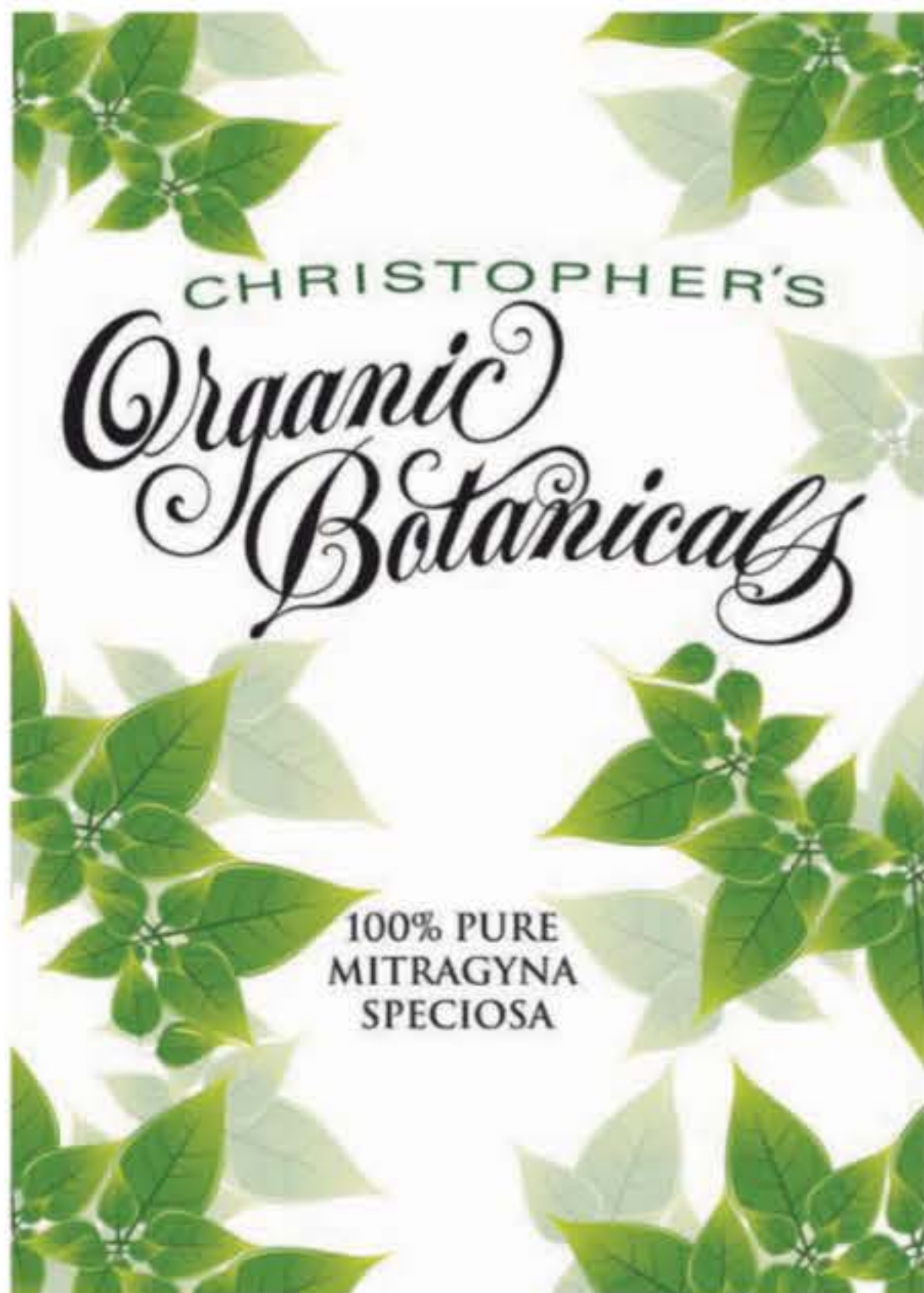
Many years ago, I was fishing,
and as I was reeling in the poor fish,
I realized, "I am killing him—all for
the passing pleasure it brings me."
And something inside me clicked.
I realized as I watched him fight
for breath, that his life was as
important to him as mine is to me.



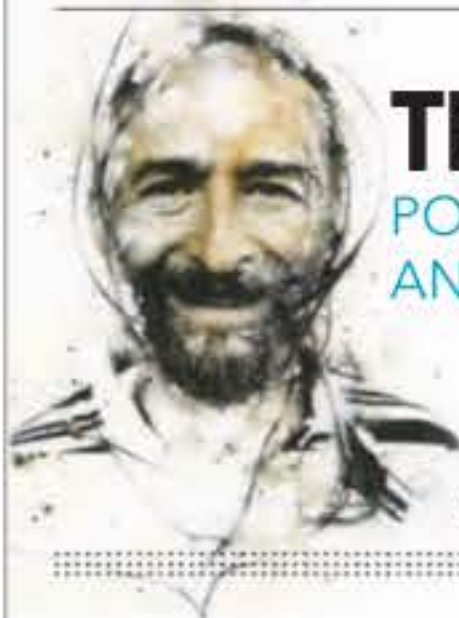
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Kids these days are saying "cross-faded." What the hell?

L. Derly Mann

Hey Mann, "Cross-faded" refers to using cannabis and alcohol simultaneously, a practice I can't recommend. Data from my lab and others suggest the habit is more likely to lead to trouble. Alcohol decreases THC's rate of metabolism. Although the effects are small, the more you drink alcohol, the more likely you are at risk of stroke, heart problems or aortic aneurism.



Pot stocks are on the rise following Jeff Sessions's departure.

What pot stocks should I be investing in?

Penny Scrooge

Greetings Scrooge, I honestly don't know. I have no secrets about the cannabis-business world. But if you want to invest in High Times, go to hightimesinvestor.com.

Would a CBD cream help my eczema?

S. Kin Issues

Hi S. Kin, Cannabidiol is a legendary anti-inflammatory, so a topical application should definitely help. I haven't seen any human trials, but work on skin cells in the lab is very promising, and human studies on general itch suggest this approach ought to work.

My mom never used to let me read sci-fi because she said it would make me "a druggie." Are there any classic sci-fi stories that focus on marijuana?

Jed I. Knight

Howdy Jed, Several novels from the genre normalize cannabis use, including Carl Sagan's *Contact*, Kristine Kathryn Rusch's *Buried Deep* and Fritz Leiber's *A Specter Is Haunting Texas*, and I'm sure tons of short stories do, too. Nevertheless, plenty of science-fiction books warn against drugs, especially PKD's *A Scanner Darkly* and Aldous Huxley's *Brave New World*. 🌿

I saw an idiotic experiment in which researchers gave folks THC and then bragged that it "decreased cannabis craving." WTF?

I.M. Madden-Kursing

Hello Madden, I'm afraid I saw the same article. They are trying to draw parallels with the nicotine-replacement idea, but it seems pretty ridiculous. Given the price of the pills (often \$1 per milligram of THC), they should just go with edibles.

Dr. Mitch Earleywine, PhD, is the author of *Understanding Marijuana* and *The Parents' Guide to Marijuana*.



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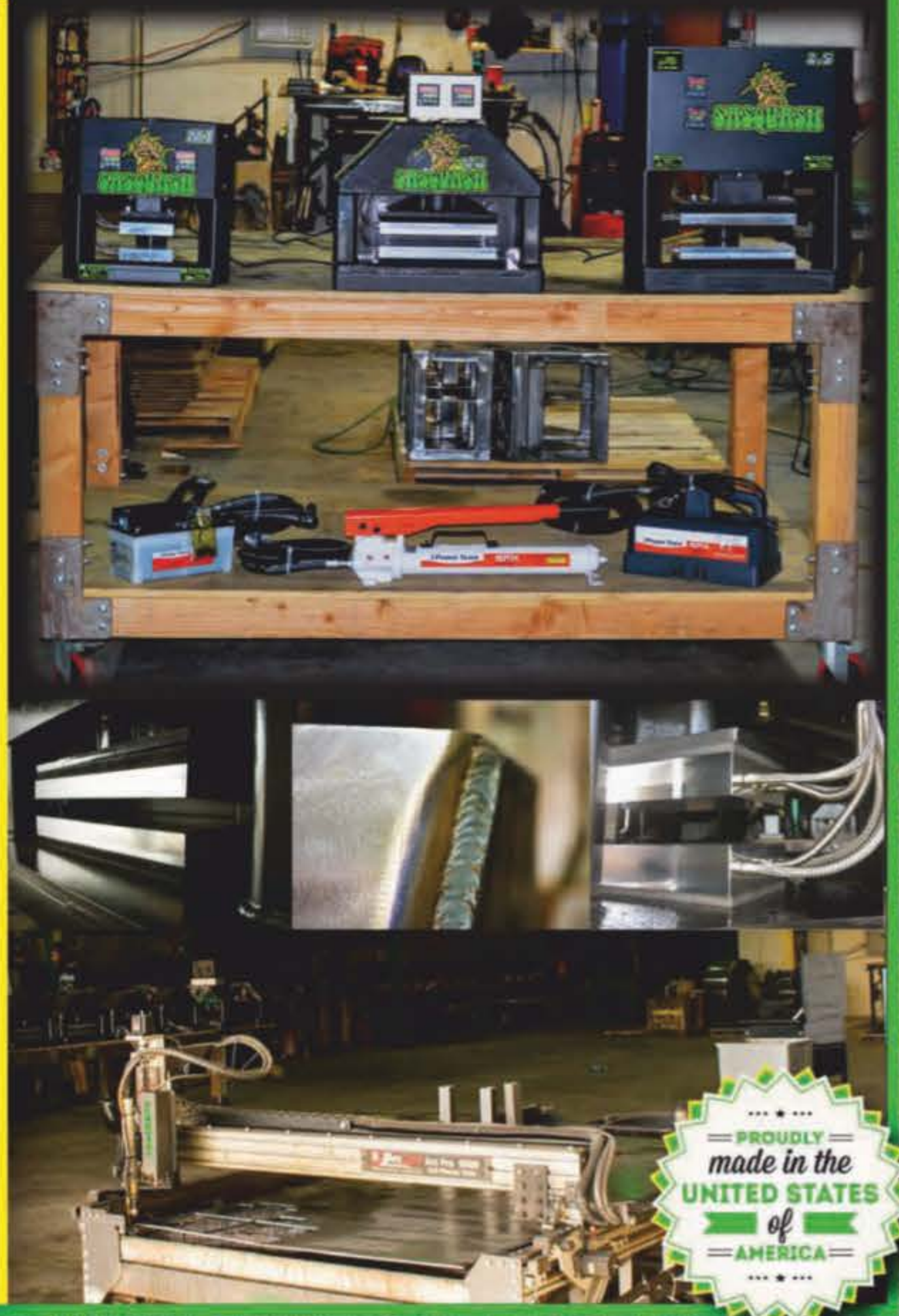
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FLOWER OF THE MONTH



CHUNKY PRIMO

This is a sampling from my indoor garden. Thanks to *High Times* for all the years of advice! *Chris B.*

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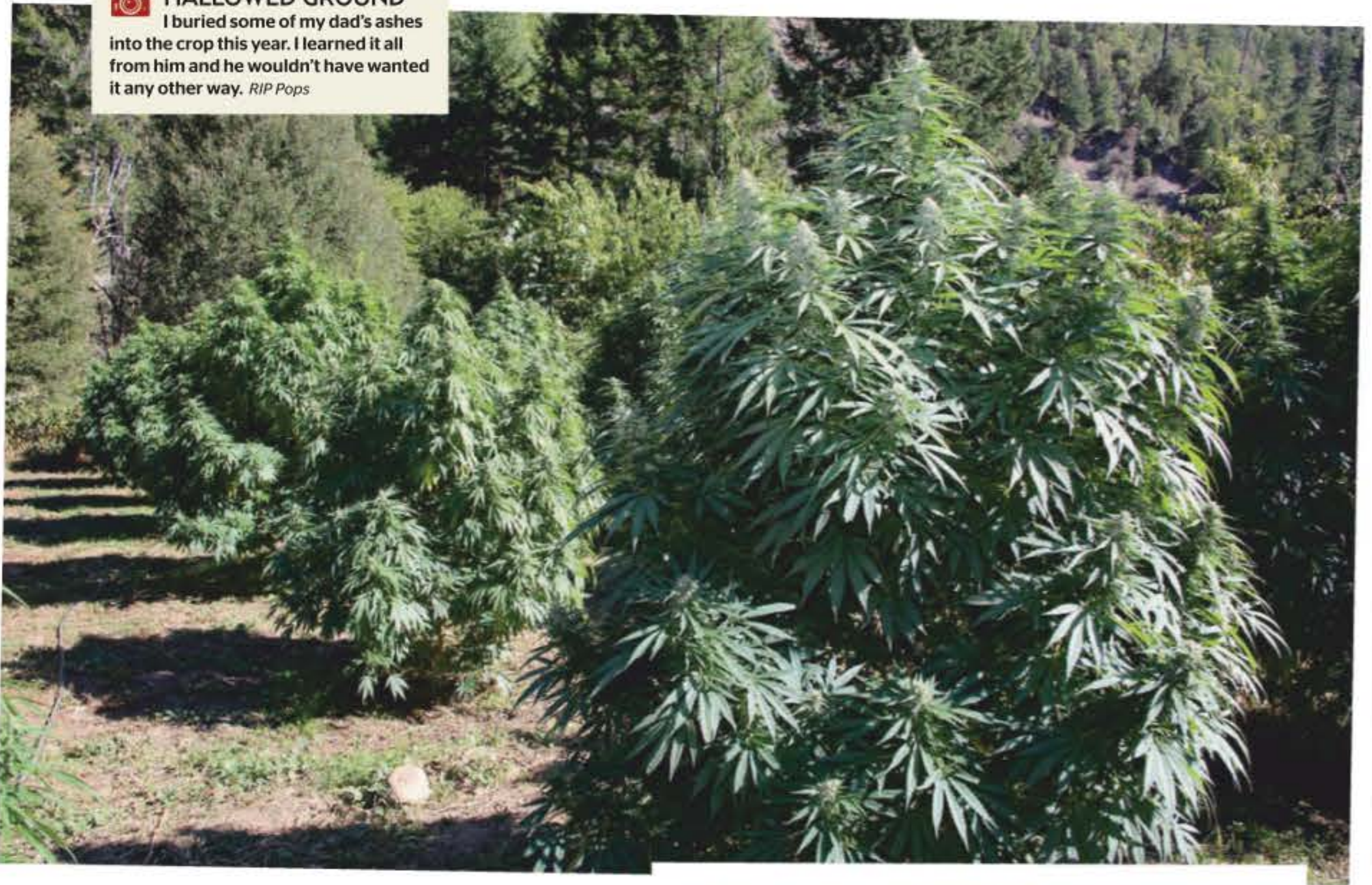
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GROW OF THE MONTH

HALLOWED GROUND

I buried some of my dad's ashes into the crop this year. I learned it all from him and he wouldn't have wanted it any other way. *RIP Pops*



CLOSE UP OF THE MONTH

MEXICO CROPPING

Acapulco Gold By ThirdBathroomGenetixx during week 9 showing a nanner. *Oldschool Mexican*



COLA OF THE MONTH

MONSTER KUSH

This was my first time adding CO2 gas to the grow with a generator and regulator. It just kept filling out! *Cutty Danks*

THE RESULTS ARE IN

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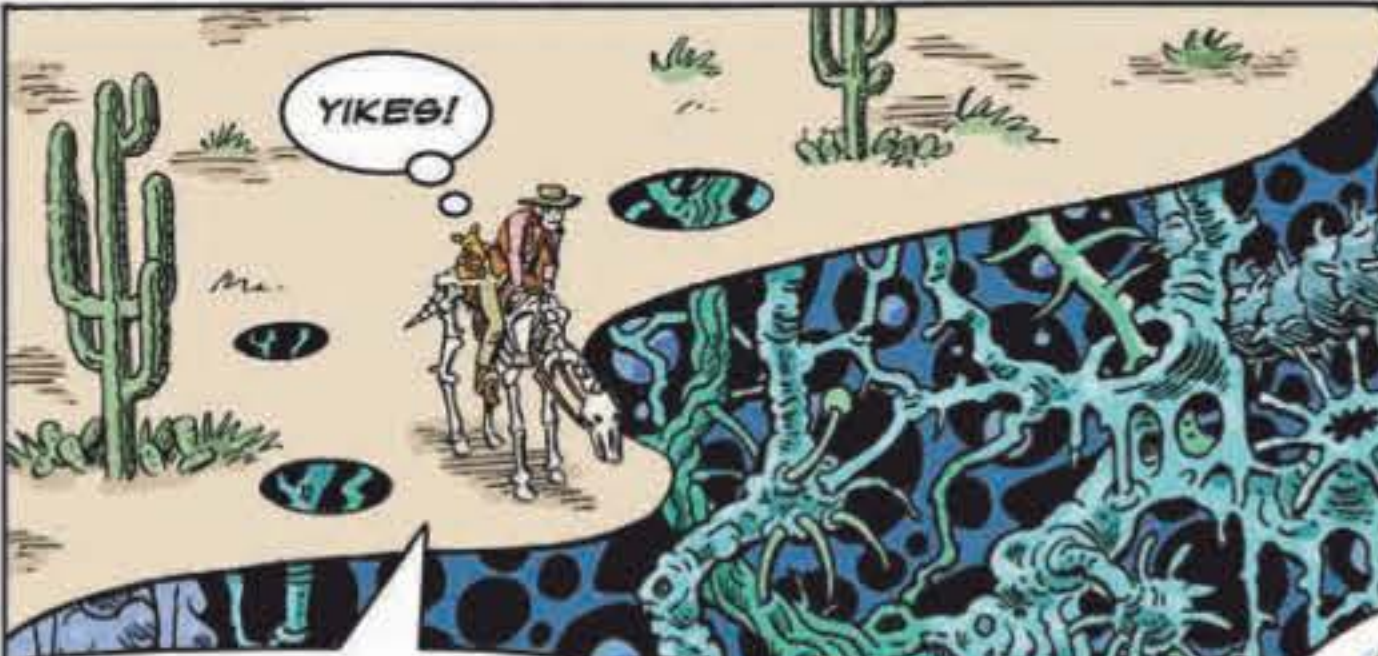
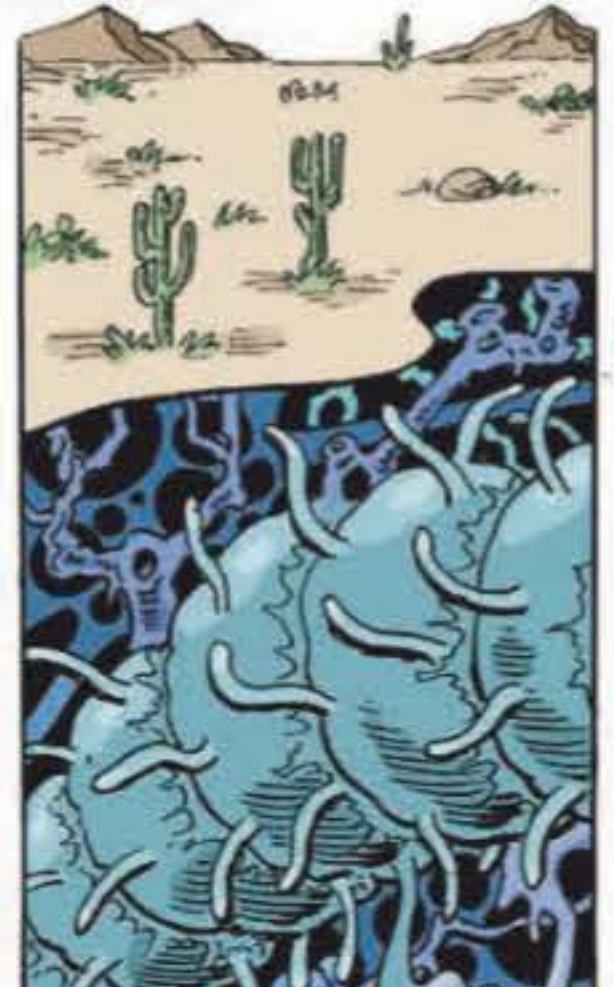
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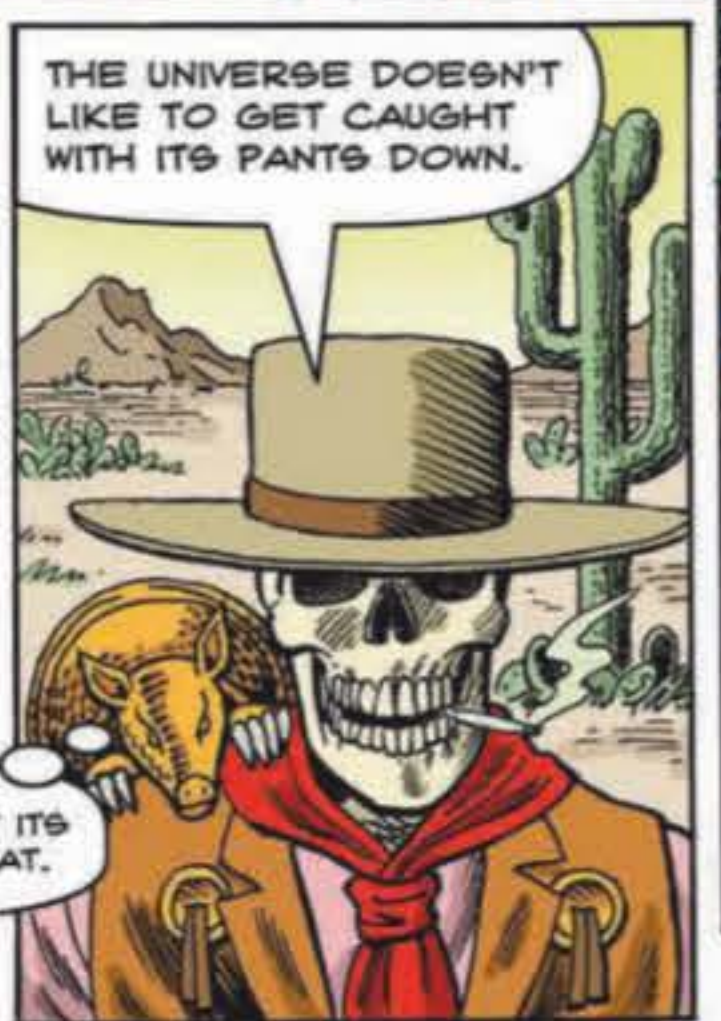


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ART & STORY BY THAT PAUL KIRCHNER GUY.

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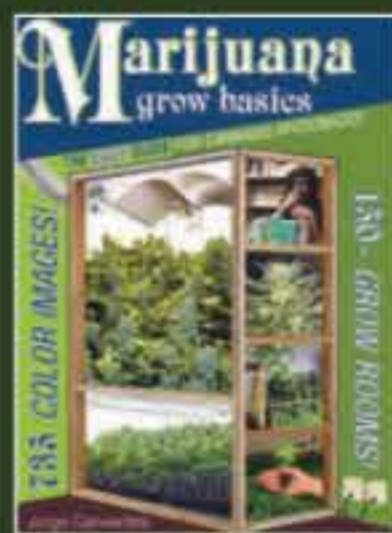
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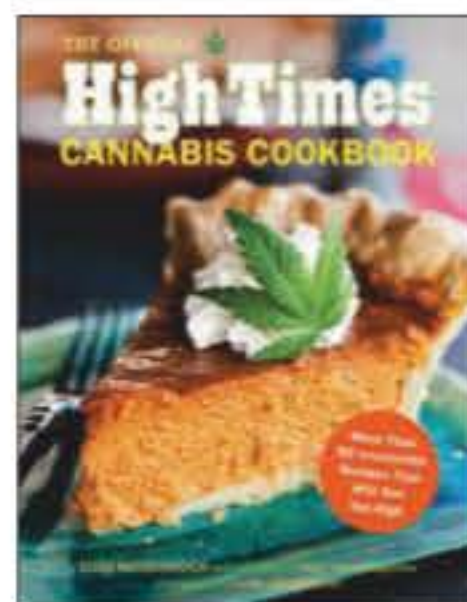


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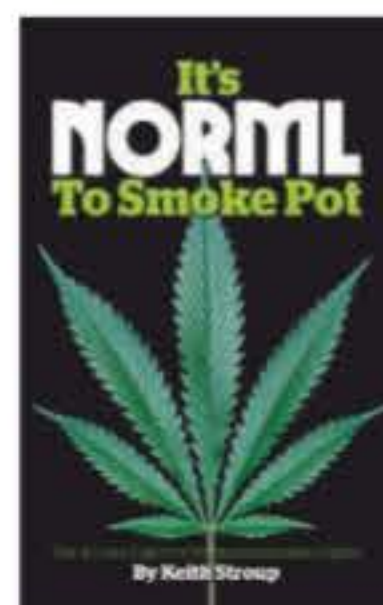
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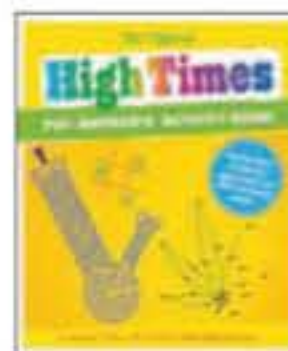
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For large Orders Print product names, quantity, price, shipping rate and order total on a sheet of paper



BC Mango x NH21 \$225 Harmony Thai \$70 Black Tuna \$125 Master Kush \$80 Kings Crown \$100 Silverback Gorilla \$125 JoJo Kush \$59

Cup Winners

| | | | | | |
|-------------------|-------|----------------------|-------|---------------|-------|
| Black Willie | \$125 | King Regular | \$100 | Rockstar Kush | \$ 55 |
| Bubble Gum Kush | \$ 55 | Kodiak Gold X Mango | \$ 50 | Tuna Kush | \$100 |
| Early Purple Kush | \$150 | Lambsbread | \$125 | | |
| Harmony | \$110 | Love Potion Next Gen | \$ 75 | | |

Hybrids

| | | | | | |
|---------------------|-------|------------------------|-------|-----------------------|-------|
| OG Kush | \$100 | Col. K. Kush | \$100 | Island Sweet X Skunk | \$100 |
| BC mango X NH21 | \$225 | Early Appalachian Auto | \$ 80 | Jo Jo Kush | \$ 59 |
| Big Bud X C99 | \$ 80 | G13 Alphadog | \$100 | Kings Crown X Thai | \$ 80 |
| Black Tuna | \$100 | G13 ChemoDog | \$100 | Kings Ransom | \$ 80 |
| Bubba Rock X C99 | \$ 80 | Golden Temple Kush | \$ 80 | Love Potion #2 X NH21 | \$225 |
| Bubba X Skunk | \$ 80 | Grand Daddy Purple | \$100 | MBA Gorilla Glue | \$100 |
| Cambo X Purple Haze | \$ 80 | Hippie Crippler | \$ 80 | Vietnamese Silverleaf | \$ 80 |
| Chemo UBC Cut | \$ 80 | | | | |

Indica

| | | | | | |
|----------------------------|-------|---------------------------|-------|--------------------|-------|
| Afghani X Pakistani Hash P | \$ 80 | Malawi Gold X Thai | \$150 | Old School OG | \$100 |
| Afpak X Skunk | \$ 80 | Maple kush | \$ 69 | Pig OG | \$100 |
| Bubble Gum Indica | \$ 65 | Master Kush | \$ 80 | Pink Kush | \$ 85 |
| Garlic Bud | \$ 65 | Master Kush X Train Wreck | \$ 80 | Roadkill Skunk | \$ 80 |
| Hindu Kush | \$ 50 | Moose Jaw Madness | \$ 70 | Silverback Gorilla | \$125 |
| King Regular | \$100 | Northern Lights X Skunk | \$ 80 | Trainwreck X Kush | \$ 85 |
| King's Crown | \$100 | Old School Indica | \$ 60 | | |

Sativa

| | | | | | |
|---------------------------|-------|-----------------------|-------|----------------------|-------|
| 90-day Autoflower Thai | \$ 80 | Sour Diesel X C99 | \$ 70 | Tropical Haze | \$ 60 |
| Harmony Thai | \$ 70 | Original Haze X Skunk | \$ 80 | Zen Hash Plant | \$100 |
| NH #21 X Early Mulimbimby | \$225 | Original Haze | \$ 80 | Northern Lights Haze | \$225 |

Feminized

| | | | | | |
|-----------------------|-------|---------------------------------|-------|--------------------------|-------|
| AlphaDawg Tuna Kush | \$110 | Harmony Kush | \$110 | Zen Hash Plant | \$110 |
| Blueberry Punch Seeds | \$110 | Lemon Ice Seeds | \$110 | Zen Hash Plant X Harmony | \$110 |
| C99 | \$110 | Reeferman Genetics Pink Kush | \$110 | | |
| Chemo UBC Cut | \$110 | Reeferman Love Potion X Harmony | \$110 | | |



High CBD Strains

| | | | |
|---------------|-------|------------------|-------|
| Harlequin CBD | \$100 | Black Willie CBD | \$120 |
| RMG CBD | \$150 | AC/DC CBD | \$ 80 |

CHECK BACK FOR COVETED PROPRIETARY STRAIN RELEASES !!!

* Prices are in US Dollars

OldSchoolBA.com®

Old School Breeders Association

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Send Orders and inquiries to: R.M.S.S. PO Box 21648 Vancouver BC Canada V5L3X0
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