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ARE EVOLVING

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on surviving a  
retail slump

**RICARDO BACA**  
addresses  
the hypocrisy  
of regulators

*The 3rd Annual*

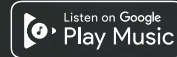
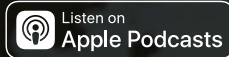
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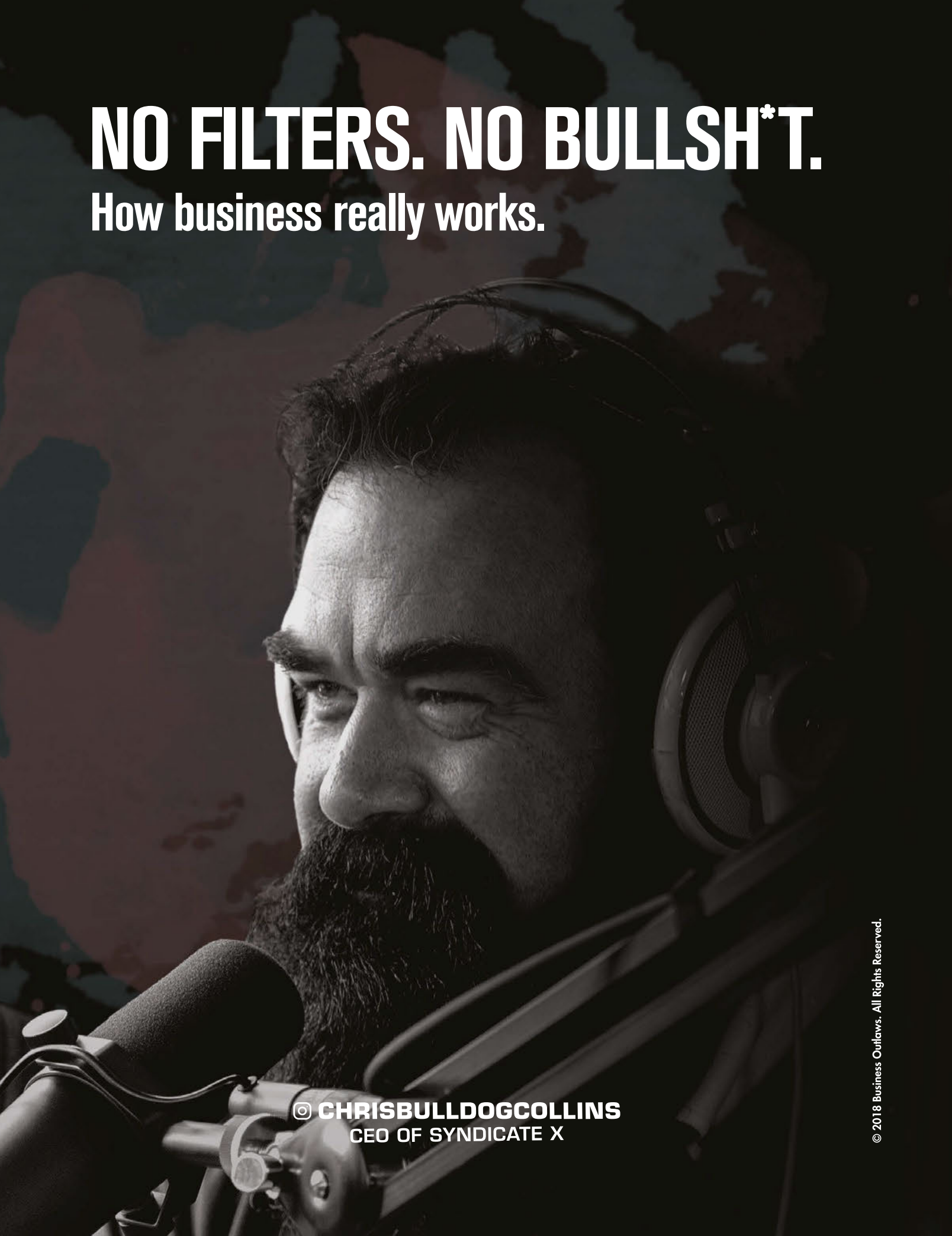


# — BUSINESS OUTLAWS —

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A black and white photograph of a man with a full beard and mustache, wearing large headphones. He is looking slightly to the left and speaking into a professional microphone. The background is dark and textured.

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FEATURE

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overabundance of weed,  
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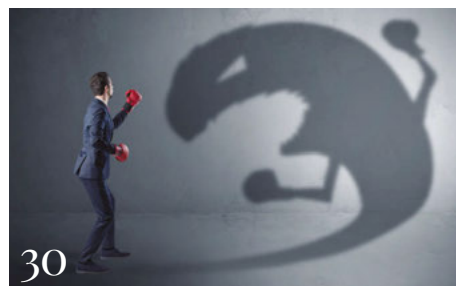




68

## FEATURE

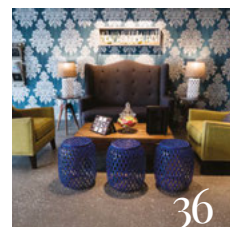
Cultivators are more determined than ever to balance ecology, profits, and commerce.



30



32



36



88

## 14 | HARVEST

News and information from around the nation.

## 30 | VOICE

Ricardo Baca points out the hypocrisy of regulators' approach to public consumption.

## 32 | OPINION

Megan Stone suggests ways dispensaries can surmount market slumps.

## 36 | TOP SHELF

Community involvement has helped Jayne thrive in hyper-competitive Portland, Oregon.

## 38 | TIP JAR

The+Source shares ways to beat the desert heat's effect on flower quality.

## 40 | SPOTLIGHT: SERVICE

Dubbed "the Salesforce of cannabis," Leaflink helps increase efficiency in buyer-seller interactions.

## 44 | HORTICULTURE

Attending to four key variables can make all the difference in bud quality.

## 64 | CORNER OFFICE

General Cannabis Corp. COO Joe Hodas steers an ever-expanding portfolio.

## 76 | LEGAL

Employers should update their human resources policies to accommodate medical cannabis users.

## 80 | PRODUCTS

Things that cut, grind, chop, vape, smoke, grow, and taste really, really good.

## 86 | HASHTAG

## 88 | RECOMMENDER

Bec Koop and Madlyne Kelly, owners of Irie Weddings & Events, recommend...



80





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## SEEING GREEN

“THE HIGHER THE RISK, the greater the reward” is one of the business world’s most enduring bromides. The cannabis industry is no stranger to risk: During the black-market era, growers and sellers faced peril daily to deliver their product to eager buyers.

Risk didn’t disappear when the industry went legit; it merely changed shape. A significant reduction in danger to freedom and wellbeing encouraged earnest participants to join the green rush. A monumental increase in opportunity to make a quick buck invited carpetbaggers to play the system.

At today’s critical juncture in the legal industry’s maturation, the greatest risk to growers, distributors, and retailers is losing their foothold in an ever-more-competitive market. Growers, especially, are finding the intersection of regulation, taxation, and competition a tough space to inhabit. Oregon, Washington, California, and Colorado all face an oversupply of plant material. Oregon’s weed glut has attracted the attention of the U.S. Attorney, who has vowed to prosecute anyone suspected of offloading excess product on the black market.

Small farmers are feeling the crunch more than most as bigger players snap up land and licenses. That trend likely will become more pronounced when Congress inevitably removes cannabis from Schedule I and the market explodes nationwide. Operations that are big now no doubt will throw their weight—and their money—behind securing absolute dominance.

Faced with declining margins and increasing costs, some growers already have abandoned generations-old family farms with deep roots. Others are digging in, forming alliances, and attempting to move the industry in a manageable direction. The feature “Too Much of a Good Thing” in this issue examines the challenges they face and some potential solutions.

Even as the industry eyes its future with both optimism and apprehension, members seek ways to lead society into a more compassionate relationship with the earth. Growers are embracing new ways to decrease their carbon footprint and new methods of eco-friendly cultivation. They’re discovering some initiatives benefit not only the planet but also their bottom lines.

As in all things, balance is key to sorting out the industry’s current conundrums. The search for equilibrium isn’t easy, but the risks will be worth the rewards.

Kathee Brewer  
Kathee@cannmg.com

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- PRICES, TAXES INHIBIT CALIF. REC SALES
- GENES MAY INFLUENCE AFFINITY FOR POT
- SNACK MAKERS SEEK CANNABIS PARTNERS



*The Herbal Chef (Chris Sayegh)*

## BUDTENDERS, MASTER GROWERS IN DEMAND

MCLEAN, Va. — Budtenders, master growers, and edibles chefs represent the top three employment opportunities in the cannabis industry nationwide, according to *USA Today*. The publication based its conclusion on an *ad hoc* survey of job listings posted on two high-traffic employment platforms, Indeed.com and Vangsters.com. The latter is cannabis-industry-specific.

According to *USA Today*, budtending requires considerable knowledge about cannabis and specific applications for cannabis products in addition to customer service skills. The position is considered entry-level, though, with starting salaries averaging \$12 to \$15 per hour. However, budtenders may work their way up to dispensary manager positions, where salaries start at about \$40,000 to \$60,000 annually, depending on the state.

Both edibles chefs and master growers fare much better financially, with salaries in the six-figure range at the top end. Both positions require significant training and experience.

Nationwide, the cannabis industry is expected to employ more than 400,000 people by 2021, according to BDS analytics.

# CONSUMERS BUYING LESS FLOWER, MORE EDIBLES, OILS



**DENVER** — Cannabis consumers are changing their product preferences, moving from flower to smoke-free items like infused edibles, concentrates, pills, and topicals. Some cite health concerns about inhaling smoke—though vapes seem not to be an issue—while others mention preferring more discreet methods of consumption.

The shift is pronounced in states where recreational use is legal. According to BDS Analytics, when Colorado legalized recreational sales in 2014, flower made up about 67 percent of all dispensary transactions. Today, flower represents only 44 percent of sales. Over the same period, concentrate sales have doubled. In the past year, Oregon dispensaries reported a 7-percent drop in flower sales. California

dispensaries have seen a 3-percent drop since the state went rec-legal in January.

Decreased demand, coupled with overproduction, is driving down flower's price. In Oregon, the price of flower dropped 41 percent in fifteen months, hitting a low of \$5.77 per gram in February.

Market analysts expect the vicious cycle of decreasing demand and falling prices to continue. They advise cultivators to differentiate themselves by developing a brand, not merely a market presence. "Just growing flower is basically a knife fight to the bottom on price," said Leaflink CEO Ryan Smith. "The brands have the power. That's what consumers expect in every industry, and this is no different."



## U.S. CANNABIS REVENUES EXPECTED TO RIVAL WINE, SPIRITS

**NEW YORK** — The legal cannabis industry in the United States is expected to grow at a 17-percent compound annual growth rate over the next decade, approaching \$50 billion in annual sales by 2028, according to an analysis by RBC Capital Markets.

At the same time, sales of spirits, wine, and beer are expected to hover around current levels of \$58 billion, \$65 billion, and \$117 billion, respectively.

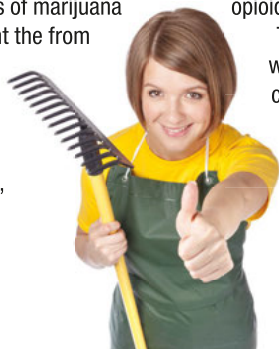
RBC based much of its estimate on recent Big Alcohol investments in cannabis entities. Constellation Brands dropping another \$4 billion on Canopy Growth Corp. over the summer caused Canopy's share price to shoot up by more than 38 percent.

## DEA TO RELAX CANNABIS RESEARCH PRODUCTION LIMITS

**WASHINGTON, D.C.** — The U.S. Drug Enforcement Administration plans to allow researchers to grow 5,400 pounds of marijuana in 2019, up more than 500 percent from the 1,000 pounds allowed in 2018. At the same time, the agency proposes to reduce by 10 percent the approved production quota for opioid drugs including fentanyl,

hydrocodone, and oxycodone. Both moves are seen as efforts to address the epidemic level of opioid-related deaths in the United States.

The agency has not addressed whether it may approve more cultivators or research facilities. Currently, only the University of Mississippi is licensed to grow weed for federal research.





## STUDY:



## HALF OF CONSUMERS CAN'T NAME FAVORITE BRANDS, STRAINS

**CHICAGO** — Despite a majority of consumers (64 percent) reporting cannabis strains are important in their purchase decisions, nearly half (45 percent) can't name their preferred strain or express no preference. Only 44 percent of edibles consumers can name their favorite brand. Both statistics come from High Yield Insights surveys.

Among smokers and vapers who said they could name strains, the majority identified their favorites only as "indica" or "sativa." GG4 and

OG Kush were the two strains most often called out by the small number of respondents who remembered actual names.

"In general, cannabis users just don't have the level of loyalty or commitment you might expect," said High Yield co-founder Mike Luce. From his perspective, "the booming market, combined with the nature of the supply chain and variable product availability, creates too much distraction for users to gravitate to a favorite."

## ONLY 40% OF CONSUMERS PROJECTED TO ABANDON BLACK MARKET BY 2020

**WASHINGTON, D.C.** — Thanks to high prices brought about by taxes, local government restrictions, and steep regulatory compliance costs, only 40 percent of California consumers are expected to abandon the black market by 2020, according to New Frontier Data's report, "2018 Cannabis Industry Trends Report: Market Insights."

However, that doesn't mean the legal market will stagnate, said New Frontier Data Chief Knowledge Officer John Kagia. "We fully expect the market to stabilize and see sustained growth following this initial turbulent period," he said.

According to the report, California's legal recreational market size is \$0.8 billion in 2018, compared to an illicit market valued at \$3.7 billion. By 2025, the legal market is expected to climb to \$4 billion and the black market decline to \$2.4 billion.



35%

of registered cannabis growers in Oregon in April 2018 were female.  
(Source: Statista)

4

states outlaw both  
THC and CBD:

Idaho, South Dakota,  
Nebraska, and Kansas.  
(Source: MJ Freeway)

20%

The increase in average  
monthly cannabis  
spending by California  
women in 2017 over 2016.  
(Source: Eaze)

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41K



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856K



## CONGRESS SEEKS PROTECTION FOR FEDERAL WORKERS WHO USE CANNABIS

WASHINGTON, D.C. — A bipartisan House bill seeks to protect federal workers from penalties for using cannabis in states where weed is legal.

Introduced by Representatives Charlie Crist (D-Fla.) and Drew Ferguson (R-Ga.), the Fairness in Federal Drug Testing Under State Laws Act (HR 6589) would prevent federal agencies from terminating employees for cannabis use as long as the employees adhere to state law. Positions that require top-level security clearance would not be protected under the proposal.

If the bill becomes law, federal employees may rest easier about job security, particularly if they can provide documentation they use cannabis for medical reasons.

Federal employees have labored under a zero-tolerance drug policy since President Ronald Reagan signed Executive Order 12564 in 1986. The order, part of Reagan's "Just Say No" campaign, prohibits federal workers using illegal narcotics on- or off-duty and helped make widespread drug screening in the workplace an American norm.



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## CHEWING GUM HEIR BITES INTO CANNABIS

ATLANTA — William Wrigley Jr. II, former chief executive officer for the chewing-gum empire his great-grandfather founded, has taken a \$65 million stake in Surterra Wellness, which holds dispensary and manufacturing licenses in Texas and Florida. Wrigley's investment composes more than half of the \$100 million Suterra has secured to date. He will serve as the company's chairman.

*Forbes* estimates Wrigley's net worth is \$2.9 billion, much of it gained in the 2008 sale of his family's business to candy-maker Mars.

[SURTERRA.COM](http://SURTERRA.COM)



## MERIDA INCREASES STAKE IN STEEP HILL

BERKELEY, Calif. — Merida Capital Partners increased its investment in international testing and analytics laboratory Steep Hill Labs Inc. Neither company divulged financial information about the transaction, but the increase earned Merida a seat on Steep Hill's board of directors and allowed Merida to appoint an interim chief executive officer to replace recently retired Jmichaële Keller.

Dr. Andrew Rosenstein was named interim CEO, effective immediately. A board-certified gastroenterologist and chief of the Division of Gastroenterology at University of Maryland Saint Joseph Medical Center, Rosenstein previously served on Steep Hill's board and currently operates Steep Hill Maryland, Steep Hill Pennsylvania, and Steep Hill Washington, D.C., under license.

Merida appointed one of its partners, Jeffrey Monat, to fill Rosenstein's seat on the board. Monat joins other recently appointed board members Brett Finkelstein of Phyto Partners, and entrepreneur and investor Stephen Finfer.

According to Monat, Merida's increased stake will be used to "transition Steep Hill into a more operationally focused company." The cannabis testing giant owns and operates labs in California, New Mexico, and Washington state and licenses labs in Alaska, Arkansas, Hawaii, Maryland, Oregon, Pennsylvania, and Washington, D.C. International licensees operate in Canada, France, Germany, Italy, Mexico, Spain, Switzerland, and the United Kingdom.

[STEEPHILL.COM](http://STEEPHILL.COM), [MERIDACAP.COM](http://MERIDACAP.COM)



## MOLSON COORS TO PRODUCE CANNABIS BEVERAGE

DENVER — One of the largest beer producers in the world has entered the cannabis space with a plan to produce infused, non-alcoholic beverages.

Molson Coors's Canada division and Quebec-based The Hydropothecary Corp. formed a joint venture to develop and produce the new drink. The JV will operate as an independent entity with its own board of directors and management.

Although Molson Coors Canada will remain primarily a brewer, according to President and Chief Executive Officer Frederic Landtmeters, there is nothing wrong with hedging one's bets. Last year, a study revealed recreational cannabis products could siphon as much as 7.1 percent of revenues from the beer industry.

Molson Coors is not the first beer maker to enter the cannabis market. California-based Lagunitas Brewing Company, which is wholly owned by Heineken International, produces a hops-flavored, THC-infused sparkling water.

[MOLSONCOORS.COM](http://MOLSONCOORS.COM)  
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## AFTER NEW CALIFORNIA SAFETY REGULATIONS WENT INTO EFFECT JULY 1:

**20%**

of cannabis samples failed lab testing.

**19%**

of cannabis samples failed due to pesticide residue.

**68%**

of cannabis products failed due to inaccurate labeling.



*There are 31 testing labs  
in California.*

*(Source: California Bureau of Cannabis Control)*



## PATHOGENDX RAISES \$3.4 MILLION IN CONVERTIBLE NOTE ROUND

TUCSON, Ariz. — PathogenDX finalized a \$3.4 million capital raise, completing its convertible note round. Altitude Investment Management and The Panther Opportunity Fund led the funding, with additional investment from Canopy Ventures, Tendaji Investments LLC, PB Venture Group, Salveo Capital, Halley Valley Venture, FlatIron Group LLC, and Spearflower VC.

PathogenDX uses proprietary DNA-based testing to isolate and identify dangerous pathogens before they impact consumers. The company offers growers, processors, producers, and ancillary services real-time data and information about product quality, enabling a safer product.

After two years of testing, Steep Hill Labs Vice President for Scientific Operations Dr. Reggie Gaudino called PathogenDX's technology "accurate, reliable, efficient, and cost effective."

**PATHOGENDX.COM**

## PRE-CLINICAL STUDY TO EXAMINE CANNABIS THERAPY FOR PARKINSON'S DISEASE

EAST LANSING, Mich. — GB Sciences Inc. will collaborate with a professor at Michigan State University to study the potential for cannabis use in the treatment of Parkinson's disease. Employing human primary white blood cells, Dr. Norbert Kaminski, director of the university's Institute for Integrative Toxicology, will investigate the toxicology, anti-inflammatory properties, and immunomodulatory activity of GB's proprietary cannabis-based neuroprotective compounds.

Kaminski is noteworthy for his pioneering studies of cannabis's effects on the immune system, especially in relation to HIV/AIDS. In 2017, he demonstrated a relationship between cannabis use and improved brain health in HIV/AIDS patients. Recently, he theorized cannabis therapy may be helpful in treating neurological disorders including Parkinson's and Alzheimer's diseases.

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## CONSTELLATION INVESTS ANOTHER \$4 BILLION IN CANOPY GROWTH



**VICTOR, N.Y. and SMITHS FALLS, Ontario** — American beverage alcohol company Constellation Brands invested another \$4 billion (CAD \$5 billion) in diversified Canadian cannabis company Canopy Growth Corp. Canopy will use the funds to accelerate its global expansion plans in the medical and recreational markets.

In October 2017, Constellation invested CAD \$245 million in Canopy Growth, representing a 9-percent ownership stake. Constellation reported USD \$453 million in pretax gains on the investment by March 31. The new investment raises Constellation's ownership interest in Canopy to 38 percent.

Canopy Growth's assets include cannabis production, branding, intellectual property, and retailing. Constellation's portfolio contains brands including Robert Mondavi wine, Corona beer, and Svedka vodka. Both companies are traded on the New York Stock Exchange.

[CBRANDS.COM](http://CBRANDS.COM), [CANOPYGROWTH.COM](http://CANOPYGROWTH.COM)



## ACREAGE HOLDINGS CLOSES \$119 MILLION PRIVATE ROUND

**NEW YORK** — Acreage Holdings secured \$119 million in capital and plans to list on the Canadian Security Exchange (CSE) this fall. The round represented the largest capital raise by a U.S. entity since the cannabis industry burst onto the legal scene.

Founder and chief executive Kevin Murphy said Acreage will list on the CSE because Canada currently offers the most opportunity for cannabis businesses, although he did not rule out listing on the New York Stock Exchange or the NASDAQ in the future. The company will leverage the tangible assets generated by the Canadian stock offering to aggregate additional U.S. assets, he said.

Murphy also said the company initially intended to raise \$50 million, but the addition of former U.S. House Speaker John Boehner and former Massachusetts Governor Bill Weld to the Acreage board of directors in April generated extraordinary enthusiasm for the brand. Both men previously opposed cannabis legalization.

Formerly known as High Street Capital Partners, Acreage Holdings operates licensed cultivation facilities in Maine, Connecticut, Oregon, Pennsylvania, Florida, New York state, and Maryland. The company also owns commercial industrial space provider Kalyx Development and has invested in Dixie Brands.

[ACREAGEHOLDINGS.COM](http://ACREAGEHOLDINGS.COM)

## CANADA'S FIRST ONLINE CANNABIS COMMUNITY FOR WOMEN DEBUTS

**TORONTO** — 48North Cannabis Corp., a female-run Canadian company focused on the female health and wellness market, launched Latitude, an online platform developed to empower and educate women while busting stigmas and stereotypes about women's cannabis use.

Research by Morawski & Associates and maru/matchbox indicated 41 percent of Canadian cannabis users are women.

48North Chief Executive Officer Alison Gordon said Latitude's goal "is to host candid, judgment-free conversations... [and] connect with women looking to evolve their path to wellbeing."

[EXPLORELATITUDE.COM](http://EXPLORELATITUDE.COM)

# 1%

of legal cannabis users  
across all age groups consume  
infused beverages.

(Source: Headset)



## NUGGETS



**1** **INCREDIBLES** debuted sophisticated new packaging that ensures freshness and structural integrity for its award-winning line of infused chocolate bars. [ILOVEINCREDIBLES.COM](http://ILOVEINCREDIBLES.COM)



**2** **ROSINBOMB** parent company Maverick Technology Solutions completed a reverse merger with Licont Corp. and now is listed on the OTC market as LNTF. [ROSINBOMB.COM](http://ROSINBOMB.COM)



**3** **KUSH BOTTLES INC.** opened a new 66,000-square-foot warehouse in Worcester, Massachusetts, to serve as the company's East Coast hub. [KUSHBOTTLES.COM](http://KUSHBOTTLES.COM)



## NANOSPHERE HEALTH SCIENCES, DELTA 9 TEAM FOR CANADIAN EXPANSION

**DENVER and WINNIPEG, Manitoba** — Delta 9 Cannabis acquired the master Canadian license for NanoSphere Health Sciences Inc.'s patented nanoencapsulation and delivery technology. Under the agreement, Delta 9 may manufacture Evolve Formulas products itself and sub-license the technology to other Canadian companies.

A licensed producer and distributor of medical cannabis, Delta 9 operates an 80,000-square-foot cultivation and production facility in Winnipeg, Manitoba, Canada.

NanoSphere recently received a U.S. patent for the standardized delivery of cannabis into systemic circulation through phospholipid nanoparticle technology. The company's previous patent covers the core technology behind the NanoSphere Delivery System at the heart of the Evolve Formulas product line. Cannabis applications of the technology include transdermal viscous gels, intranasal products, and intraoral products.

Under the thirty-six-month agreement, each party will receive 50 percent of the net revenue from the sale of Evolve Formulas products.

[NANOSPHEREHEALTH.COM](http://NANOSPHEREHEALTH.COM), [DELTA9.CA](http://DELTA9.CA)

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# CULTIVATION REVENUE LANDSCAPE

*Over the next five years, the revenue landscape for U.S. growers could see significant shifts as new states enter the legal cannabis marketplace and the industry matures.*

## YOU WIN SOME; YOU LOSE SOME

*Between 2017 and 2022:*

Florida growers gain big with revenue growth of

**232%**

Washington cultivation revenues decline by

**41.7%**

Flower market demand rises by

**907%**

in Delaware.



### TOTAL U.S. CULTIVATION REVENUE, 2017 TO 2022

2017:  
**\$2.83 B**

2022 (projected):  
**\$2.85 B**

Revenue Growth:  
**0.7%**

Growth in market demand for flower:  
**127.4%**

### CALIFORNIA CULTIVATION REVENUE CONTINUES TO LEAD

2017 revenue:  
**\$992.7 M**

2022 (projected):  
**\$937.9 M**

Projected revenue growth:  
**-5.5%**

Projected growth in market demand for flower:  
**112.9%**

### COLORADO MAINTAINS NO. 2 REVENUE SPOT, EVEN THOUGH GROWTH IS NEGATIVE

2017 cultivation revenue:  
**\$500.4 M**

2022 (projected):  
**\$300.4 M**

Projected revenue growth:  
**-40%**

Projected growth in market demand for flower:  
**35.3%**



## TEXAS IS A LATE BLOOMER

*The second most populous U.S. state (behind California), Texas isn't expected to enter the cultivation market until 2021.*

*By 2022, flower demand will barely break into the upper half of the market, but year-over-year growth potential is among the largest.*

2021:  
**\$23.8 M**

2022:  
**\$38.5 M**

Projected cultivation revenue growth:

**61.8%**

Projected growth in market demand for flower:

**90.2%**

## 6 STATES ENTER THE CULTIVATION SPACE IN 2018

*By 2022, cultivation revenue projections (in millions):*

MARYLAND  
**\$38.6**

PENNSYLVANIA  
**\$32.8**

OHIO  
**\$26.9**

ARKANSAS  
**\$12.5**

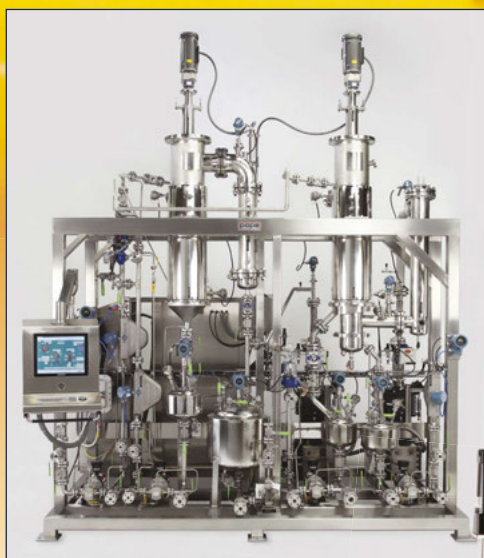
LOUISIANA  
**\$4**

NORTH DAKOTA:  
**\$3.2**

Source: "Cut and Dried: Blooming Demand for Legal Cultivation," co-produced by Arcview Market Research and BDS Analytics. Complete report available on [BDSAnalytics.com](http://BDSAnalytics.com) in late October.

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*Pope stills are scalable from small lab duty up through large industrial production sizes. Shown are Glass 2" (left) and Turnkey Multistage Automated System (right).*

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## EVENTS



## CALENDAR OF EVENTS

*The following is a list of select industry events taking place during November 2018.*

### HEROGROWN GOLF FALL CLASSIC NOVEMBER 12

THE LAS VEGAS NATIONAL GOLF CLUB  
LAS VEGAS

Designed to allow cannabis professionals a chance to forge business relationships among friendly competition, the fast-paced scramble begins with a shotgun start on a legendary course and ends with an awards banquet and celebrity auction. Proceeds benefit the HeroGrown Foundation, which since 2014 has given more than \$2 million worth of cannabis to veterans and first responders.

[HEROGROWN.GOLF](http://HEROGROWN.GOLF)

### MCBIZCON NOVEMBER 14-16

LAS VEGAS CONVENTION CENTER  
LAS VEGAS

More than 20,000 cannabis professionals and 900 exhibitors will descend on Sin City for activities including a "marijuana business crash course," science symposium, hemp forum, women's networking reception, and minority and investors lunches. Sundial Growers Chief Executive Officer Torsten Kuenzlen and CS Ventures partner and CPG investor Codie Sanchez will deliver keynote addresses.

[MCBIZCONFERENCE.COM](http://MCBIZCONFERENCE.COM)

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## ERIK HECHT

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# THE BOGEYMAN THAT WASN'T

*Cannabis regulators are hypocrites when it comes to social consumption.*

BY RICARDO BACA

**G**OOD journalism depends on solid relationships with sources who not only will return your calls on deadline, but also talk with you *on background*, giving you information they can't talk about on the record. Those relationships allow journalists a deeper understanding of the subject matter. Sometimes the sources drop truth bombs, as did former FBI Associate Director Mark Felt (a.k.a. "Deep Throat") during the Watergate scandal. Other times they provide a more complete perspective about complex and secretive situations.

Regardless, quality journalism depends on these valuable reporter-source relationships. Here's a brief example of how these sometimes work—and how one helped this cannabis journalist understand marijuana regulators in America's first legal state were working toward legalizing marijuana sales at the same time they were all but working against legal consumption.

The afternoon sun filtered into the Capitol Hill coffee shop as I sat across the table from one of Colorado's most influential cannabis regulators back in 2014, less than a year after the state began selling adult-use marijuana. Our conversation was wide-ranging, sometimes ducking and weaving between on the record and off the record multiple times in a single answer—and illuminating much of what had been happening behind the scenes for me, a reporter whose beat was legal cannabis.

Like many reporters, I saved some of the more challenging questions for the end of the interview in case the source up and walked out right there. As our hour came to an end, I let fly a question about Colorado's intensely restrictive consumption laws that basically limited cannabis use to one's private home: "What are you planning to do about the problem of social cannabis consumption?"

"I'm not sure I see it as a problem," the regulator responded, telling me everything I needed to know about the government's take on the issue.

Think about it: You could grow your own and you could buy your own and you could share it with your friends and family, but the only place anyone could legally consume was (and largely still is) a private residence with the homeowner's permission. All marijuana consumption, edibles included, was and is illegal in parks, on street corners, and in hotels.

I followed up. "You don't see it as problematic that we can legally purchase this substance at hundreds of stores across the state and grow it in our basement, and yet we can't consume it anywhere?"

The regulator talked about prioritizing the bigger issues at hand while standing up and heading for the door—and in 2014, there were bigger issues at hand. But when there was no progress on social marijuana use in 2015 or most of 2016, when a lot of the other issues had been resolved, it was obvious regulators did not care about the consumption issue.

That is, they didn't care about it until voters in Denver County approved Initiative 300 in November 2016, which would allow neighborhood-approved businesses to act as consumption-friendly venues: art galleries, bars, restaurants, and coffee shops like the one from the above meeting. But a few days after the election results were tallied, the state's Liquor Enforcement Division released a new rule stating any business with a liquor license would not be permitted for cannabis consumption of any kind under I300.

Of course, the rule came about after “the liquor industry raised concerns about consumption of marijuana at businesses that serve alcohol and ‘the need to expressly prohibit it,’” *The Denver Post* reported in November 2016, but the new rule severely limited the spaces to which I300 would apply.

So where do I300-approved businesses stand in Colorado today, four years after my conversation with the regulator and nearly two years after the election that saw Denver voters say yes to social marijuana use? An August 25, 2018, headline from my former employer, *The Denver Post*, says it all: “Denver’s second licensed social marijuana business to open this fall as vaping bar and lounge.”

Two approved consumption spaces in two years. Hardly what you’d call progress.

Of course, Colorado is merely one of many case studies happening throughout the world now, but the hypocritical chicken-or-egg conundrum is present in nearly every legal-ish market across the globe. Internationally, coffeehouses in the Netherlands have peddled cannabis and allowed on-site consumption for decades, but meanwhile the cultivation of marijuana is still heavily criminalized there. Spain’s cannabis club scene is growing in stature, but its unregulated, whisper-and-a-handshake membership model isn’t fully legal.

But there’s good news on the horizon. Much has been written about the limited consumption lounges in San Francisco that are licensed by the city, and none of that press has been negative. There also is movement in Alaska “to officially permit recreational marijuana consumers the right to use cannabis in specially state-licensed establishments,” *Marijuana Moment* recently reported.

In Nevada—where, according to the *Las Vegas Review Journal*, “consumption is prohibited outside of private residences” including “casinos, parks, and everywhere on the Strip and downtown, leaving an estimated 42 million annual tourists without a place to legally use marijuana”—cannabis consumption lounges are expected to open by December.

“There’s such a push for this,” Las Vegas Councilman Bob Coffin told the *Las Vegas Sun*. “We’re being careful and moving slowly.”

And there it is, friends: A government official recognizing the demand—the need—for spaces that are permitted for the use of this substance being legally sold all over the place. The hypocrisy of other government officials refusing to acknowledge the lack of consumption spaces as a problem is appalling, and it also flies in the face of public service.

If governments are going to allow the cultivation and sale of marijuana, they must allow for the reasonable consumption of marijuana. Anything else is a public disservice. 🍀



*RICARDO BACA is a veteran journalist and thought leader in the legal cannabis space and founder of Grasslands: A Journalism-Minded Agency, which handles public relations, content marketing, social media, events and thought leadership for brands and executives in legal cannabis and other industries. MyGrasslands.com*



# 5 WAYS TO SURVIVE A MARKET DOWNTURN



*Megan Stone is founder and owner of The High Road Design Studio. Her award-winning work has helped usher dispensaries onto Main Street and into the mainstream, and has forever changed the international conversation about the retailing of "vice."*

**C**ANNABIS oversupply in states like Oregon and the resulting potential for black-market diversion rightfully are causes for concern. For vertically integrated dispensaries that heavily rely on selling products they grow themselves, this market change can be a scary experience. In contrast, for dispensaries that source their offerings entirely from the wholesale market, the reality presents some big opportunities to leverage ample supply and lower prices. As my partner and I prepare to open our own dispensary, these are things we are thinking about, too. We are a retail-only license holder, completely reliant on the health of the wholesale

market to supply the products we curate for our shelves.

Whether a dispensary grows its own supply or enjoys the wholesale glut, here are five ways to dig deep into business strategy to define a competitive advantage, differentiate from the competition, and grow market share in challenging times.

## IT'S ALL ABOUT THE BRAND

A defined brand is the foundation of any successful retail business. Branding reflects a business's mission and purpose, and if it is missing the company lacks substance. A carefully considered and crafted brand communicates the personality and ethos of your business. It is your style, your tone—your distinct

signature and the guiding principle for every business decision. Your brand is how you attract your ideal audience and why they can't help being fiercely loyal. Think about the brands to which you are loyal and why you love them. Then think about why consumers should be loyal to your brand and your dispensary. Invest the time, energy, and capital to connect with them.

Texas Original Cannabis Company is an excellent example. This vertically integrated dispensary understood the importance of an authentic brand and a carefully crafted retail experience. The logo and retail space convey a true sense of Texas pride, quality medicine, and professionalism. The brand communicates the dispensary's dedication to serving the special needs of epileptic customers and families and a commitment to shifting cultural attitudes and expectations about cannabis.

## BE A DESTINATION; DELIVER AN EXPERIENCE

Build your brand to be more than a place to buy some pot—the exact same pot with which every other dispensary in town is overflowing. The most successful retailers and brands today are the ones who invest in creating memorable experiences start to finish. In all customer touchpoints—from website and brick-and-mortar dispensary to staff and purchasing process—every step on the customer journey counts. What can you do to engage customers? This is where the design of a brand can play a key role by creating memorable, Instagrammable, legendary moments. If customers take photos and share with the world, they are happy and engaged. A successful brand experience breeds loyalty and establishes a brand's position in the market.

Gnome Grown Organics's two retail locations in Oregon City, Oregon, are the embodiment of a brand dedicated to legendary organic cannabis cultivation practices, stewardship of nature, and passion for quality. Every detail of the brand's retail experience is inspired by the



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# FITTING IN AND STANDING OUT

*In a hyper-competitive market, community and quality have been a winning combo for Oregon dispensary Jayne.*

**O**N the northwest edge of the Eliot neighborhood in downtown Portland, Oregon, a stone's throw from iconic spots like the Moda Center and Wonder Ballroom, sits Jayne, one of the city's most popular dispensaries. With its whimsical aesthetics and upscale, urban clientele, the former automotive repair garage appears right at home in the trendy, pine-tree-ringed neighborhood full of hot restaurants, pricey spas, and glistering boutiques.

That wasn't always the case. Beginning in early-2014, from the day the shop was conceived by avid agronomist Robb Arnold, Jayne was plagued with construction stoppages and political red tape until finally opening in November 2015.

Right away, convoluted testing laws and regulations placed a burden on the dispensary's ability to grow. Arnold needed an expert to manage the shop. He found the perfect fit in Briana Burke, whose experience at testing facility Green Leaf Lab had made her a respected cannabis professional with extensive contacts among growers, advocates, and industry executives.

Although Burke, 27, was quick to bring the shop into compliance with testing requirements, the state's banking issues haven't been as easy to navigate. Currently, Jayne uses a bank that charges a monthly service fee of \$250 and an additional 0.5 percent of all deposits. "They cap the bank account fees at \$1,000 per month," Burke said. That's comforting, to a point, but she still finds it unfair that cannabis businesses are gouged in interactions with mainstream entities.



*All photos courtesy of Jayne.*





Another challenge has been ever-increasing competition. More than 150 dispensaries in and around the city sell the same flower, edibles, and concentrates. Even though *Portland Monthly* and *High Times* ranked Jayne among Portland's top ten shops, Burke constantly seeks new ways to stand out. She began by making Jayne a vital part of the community.

To that end, there's always something happening at Jayne, from monthly parking lot barbecues and soapbox derbies to costume parties and yoga operas. The 4th of July weekend bash included on-site vendors like WYLD, Sweet Cannabis, Magic Number, and Cascade High. Recently, the shop introduced "First Fridays," in-store soirees featuring the "local-cause strain" each month.

"On the most basic level, we have great products and a comfortable atmosphere, and we strive to provide great customer service," said Aaron Heisler, Jayne's marketing coordinator. "But the best thing we have going for us is our community... Jayne would not be what it is today without our amazing customers and community."

In fact, Heisler just sealed a community-type deal with Jayne's neighbor, the Jupiter Hotel, a funky, midcentury establishment that recently underwent a modern, swanky, cannabis-friendly makeover. All Jupiter guests receive a 10-percent discount at Jayne. Heisler noted the hotel's business model "fits very well with ours because they are so cannabis-positive, to the limit to which they can be."

Burke also insisted the shop become the first female-friendly cannabis businesses in the city. Although Jayne serves all genders, Burke made sure to hire lots of women and curate a menu that highlights female producers. She also hung local female artists' work on the elegant, wood-paneled walls.

Jayne serves almost 150 customers a day. Flower is the shop's top seller, accounting for about 40 percent of sales. Most of the top-shelf bud is from Southern Oregon's Pilot Farm, where the elevation of about 4,000 feet, sun-dappled days, and breezy, cool evenings create clean, sustainable, and potent cannabis. From day one, strains like Mountain Girl Blue (a heady sativa), Jack Skellington (a spicy indica), and Mendocino Purple (a Zen hybrid) have been customer favorites. Lately, cartridges, vape pens, and pre-rolls have seen an uptick in sales, Arnold said.

Oregon has been a volatile market for vendors since January 2017, when final Oregon Liquor Control Commission licensing and full retail sales went into effect. Jayne's best-selling brands have been those that seamlessly made the transition and maintained a consistent presence on the shelf—brands such as Karma Originals pre-rolls, O.penVAPE, and grön edibles.

These days, Burke spends the bulk of her time meeting with vendors, reviewing inventory, placing orders, planning monthly events, and analyzing sales trends. The process appears to be working: Jayne's business grew 30 percent from 2016 to 2017. In its first full year of operation, the shop nearly doubled monthly sales. "The outlook is good," said Burke. "As an emerging industry, making the transition from black market to an open market was a hard road, but we have worked hard to differentiate ourselves from our competitors." —Rob Hill

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JAYNEPDX.COM



# BEATING THE HEAT

*The biggest sin in Sin City may be the desert's effect on flower quality.*



*Las Vegas's The+Source takes every step possible to keep its product fresh as a flower.*

**E**ACH regional market within the cannabis industry faces its own unique challenges. For Nevada dispensaries, one of the biggest is the unforgiving nature of the desert. “The Nevada climate causes dryness issues that other markets don’t deal with,” said Courtney Barker, purchasing manager for The+Source, a dispensary with two locations in Las Vegas.

Excessively dry flower can shortchange both consumers and dispensaries. For one thing, the drier the bud, the faster it burns, which may lead customers to believe they are not getting their money’s worth. It’s difficult not to feel cheated when your stash disappears more quickly than you expected. Extra-dry flower also can be “harsh when smoked, if not properly preserved, and dryness may change the flavor profile,” Barker explained.

Dispensaries feel the heat on their end, too. “Dry flower weighs less, and if we were to receive it and sell it [drier than it should be], that would hurt our bottom line,” Barker said. In addition, “customers would notice immediately and not come back.”

While much of cannabis cultivation requires manipulating the environment, no one can control the climate. If the desert air lacks moisture, cannabis flower is destined to dry out. Or is it? Barker said The+Source has found several ways to ameliorate the effects of arid conditions.

First, “we purchase in bulk, so we can keep the flower perfectly hydrated before packaging,” she said. Employees handle the product no more than necessary, and the flower is exposed to air as little as possible. Limiting exposure to


the elements also helps prevent light from degrading the merchandise. Packaging on-site allows additional control by removing the possibility third parties will act carelessly.

Possibly the most helpful procedure to which the dispensary adheres is ordering frequently. “When you buy flower from our store, it has likely been packaged within the past week,” Barker said. “We’ve found this is the best way to ensure freshness.”

Once upon a time, shops may have been able to get away with selling subpar smokable cannabis, but as legal markets continue to grow at a rapid pace, stiff competition calls for taking quality control seriously.

“We are one of only five dispensaries in Las Vegas that purchase in bulk and package in-store,” Barker said. “While our product doesn’t come in the jar customers are used to, they are getting the highest-quality flower possible.”

The non-traditional packaging doesn’t seem to bother anyone. According to Barker, customers have not voiced any complaints about The+Source’s merchandise. Sadly, she noted, she cannot say the same about her interactions with vendors. “Sometimes I get samples of flower and it’s so dry I can’t even smoke it until it’s had a Boveda pack in there for a few days,” she said. “I don’t have that issue when I bring flower home from our stores.”

While Barker constantly explores new ways to ensure freshness, she feels confident current precautions are providing consumers with the quality they demand and deserve. “I think we have a great handle on how we’re processing things within the stores,” she said. “We are able to deliver the freshest flower in Vegas.”  —Danny Reed

# CALIFORNIA COMPLIANCE

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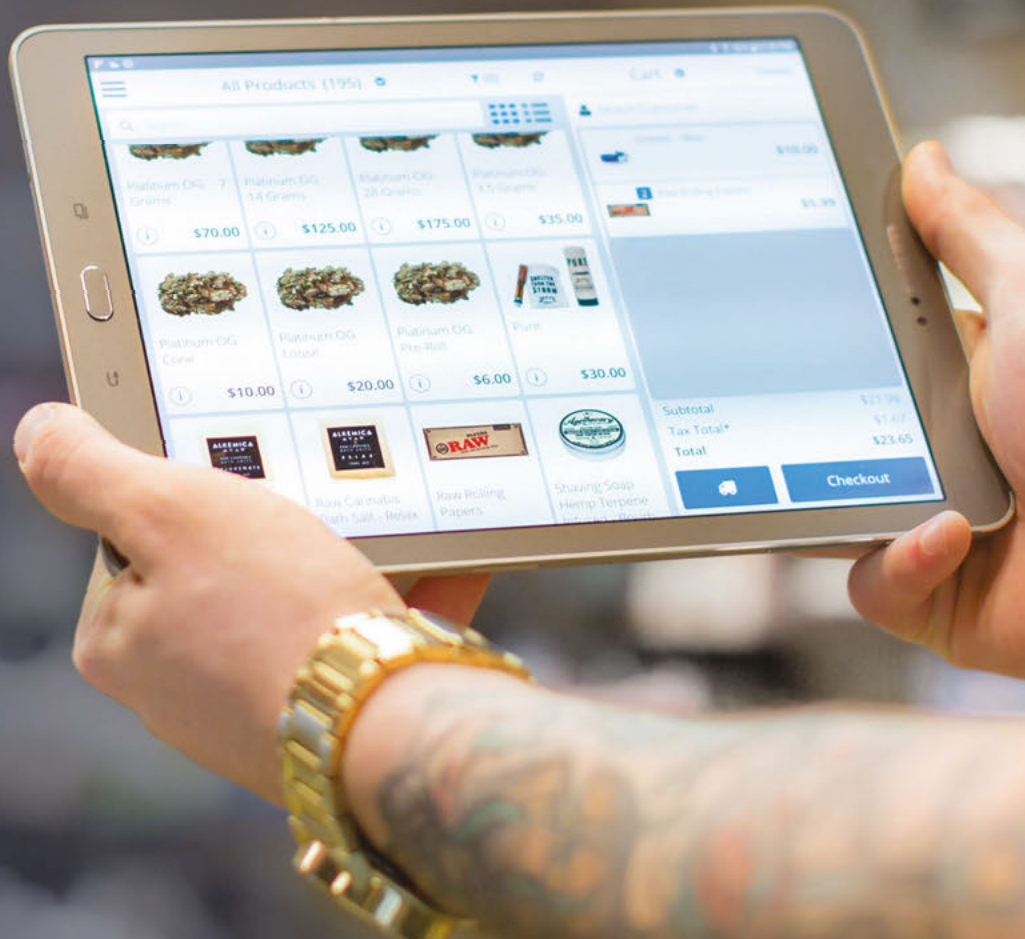
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Zach Silverman, left, and Ryan G. Smith, co-founders of LeafLink. (All photos courtesy of LeafLink.)

## UNDER LEAFLINK'S CANOPY

*Dubbed “the Salesforce of cannabis,” the platform connects sales teams and customers to boost efficiency.*

**I**N 2016, LeafLink co-founder and Chief Executive Officer Ryan G. Smith became the first cannabis entrepreneur to make *Forbes Magazine's* annual “30 Under 30” list. Shortly thereafter, LeafLink made *Fast Company's* “World’s Most Innovative Companies” list, coming in at number 10 behind Slack, Cloudflare, Highfive, and Amazon. The magazine dubbed LeafLink the “Salesforce of the cannabis industry.”

Smith was a cannabis neophyte when he and a partner developed a wholesale platform for the industry. “I grew up on the East Coast,” he said, “and the cannabis movement there was, and is, far behind that of the West Coast.” Nevertheless, he saw enormous opportunity in designing a system that would allow cannabis businesses of all types and sizes to place and receive orders, manage customer relationships, and create reports through a single interface.

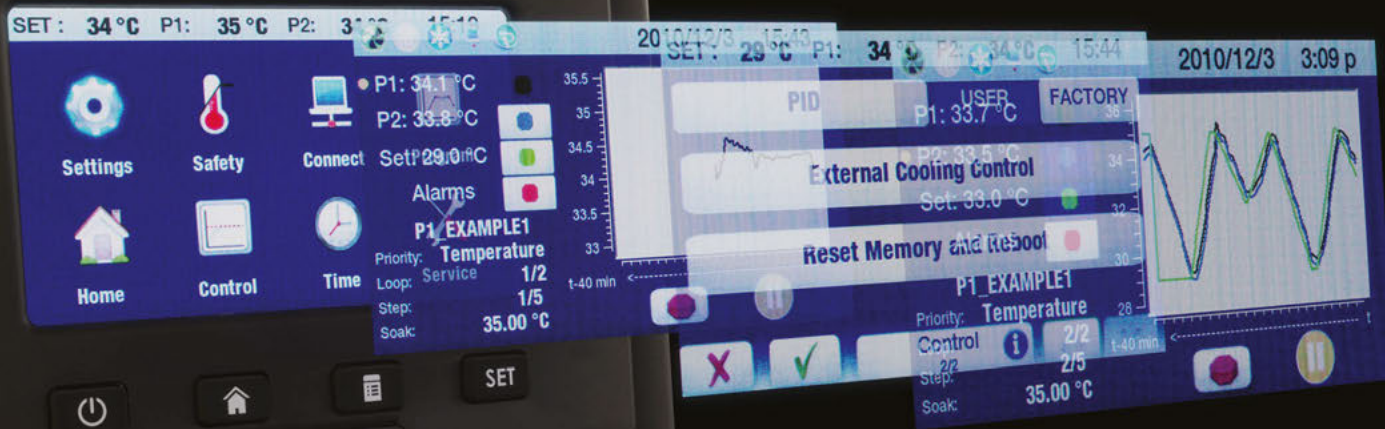
Smith and co-founder Zach Silverman, who serves as chief technology officer, didn’t fully understand

the complexities of the industry until they met with potential investors on the West Coast. Initial response to their notion was cautious. Many of the people with whom they spoke broached questions about laws, compliance, prohibition, and other issues with which the industry grapples daily. There were no easy answers.

“In 2016, cannabis companies were not getting the funding they are today,” Smith said. “Our first round of investors were really just making a bet on our past achievements.” The bet paid off. To date, LeafLink has raised \$14 million, including investments from Lerer Hippeau, Nosara Capital, and Casa Verde Capital. Smith said all the investors were impressed with LeafLink’s business model, which doesn’t involve “touching the plant.” LeafLink doesn’t host financial transactions between buyers and sellers, either. Instead, the platform merely facilitates interaction between dispensaries, product manufacturers, and distributors—people who *do* touch the plant.

The company’s revenue model is equally simple: Subscription fees start at \$299 per month, increasing

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relative to the size of the subscriber. LeafLink recently launched additional revenue streams in the form of on-site advertising, a services marketplace that complements the products marketplace, and real-world events called LLLocal.

At its core, according to Smith, LeafLink is a technology company, which allows the platform to sidestep many of the limitations in the highly regulated and volatile cannabis marketplace. The company's team of forty comprises a mix of experienced technologists and cannabis professionals. "Our team has been able to accomplish something special since we launched: a network effect where brands and retailers help each other grow," said Smith. "Through LeafLink's platform, we've been able to help move this industry forward with market-defining technology, penetrating markets in record time."

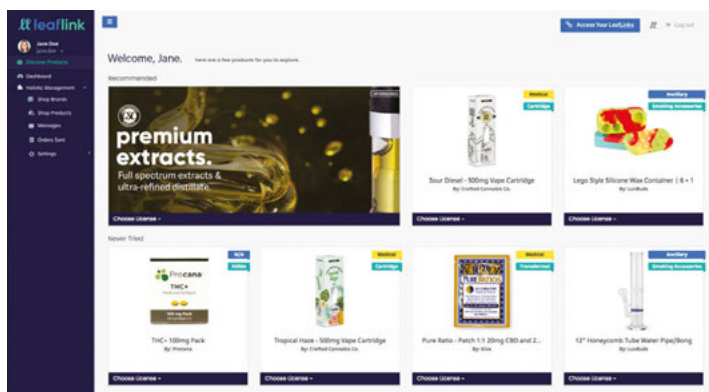
The platform generates a positive impact on revenues across the commercial spectrum, Smith noted, although the most easily quantified by many clients is the impact on sales. By centralizing orders and facilitating the discovery of new products, pricing, and business relationships, sales representatives may spend less time processing orders from current customers. That leaves them free to focus on new prospects.

Smith said the advent of legal recreational use in California—the world's eighth largest economy, even without cannabis—was a key test for the platform's infrastructure, reach, and suitability. In late 2017, he and a few employees traveled the state to get a ground-floor look at retail operations. Visiting more than 250 dispensaries convinced Smith LeafLink presented the proper value proposition: consistent, packaged products with a clear mission and brand could outperform raw

flower if marketed efficiently. At the time, that was a radical notion.


Nevertheless, 2018 has not been an easy year for the industry, and thus, the company. California continues to grapple with the challenges of mainstreaming and regulating its market, "something we've been following very closely, actively off-boarding non-compliant retailers and brands to bring a fully compliant

Product dashboard  
for a LeafLink  
retail subscriber.

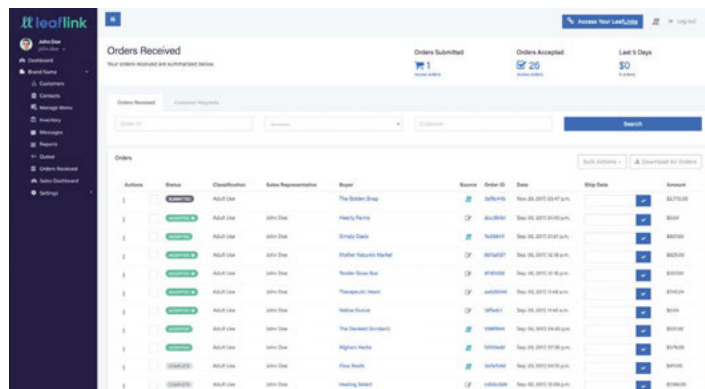


He learned from past startups that staying ahead of the curve, having the most innovative technology, and anticipating marketplace trends compose the three pillars of success. LeafLink uses that experience to pursue its goals. "We knew we could use our background as technologists to streamline the entire supply chain for the industry and help these regulated cannabis businesses create efficiencies and grow their own operations to turn their visions into realities," Smith said.

Addressing inefficiency is central to LeafLink's mission. Before the platform's debut, brands collected orders from dispensaries by text or email. The process was clumsy, wasted time, led to lost sales, and raised the specter of compliance issues. But LeafLink offered the ability to follow each transaction through a licensed supply chain from seed to sale—something new, and badly needed, at the time.

marketplace to that state," Smith said. Oregon and Washington are dealing with over-licensing and state compliance software issues. East Coast and Midwest states continue to suffer delays in launching their marketplaces. LeafLink's goal is to react quickly to the changing environments and build reliable, scalable solutions that serve each market's unique needs. 

—Rob Hill



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Greenhouse-grown cannabis may require supplemental lighting to reach full bud potential. (Photo courtesy of GrowSpan Greenhouse Structures.)

# FOUR WAYS TO IMPROVE BUD QUALITY

*Nutrition, temperature, lighting, and ventilation can make all the difference.*

BY JESSICA BATCHELOR

**W**ITH medical and recreational cannabis markets booming, growers who focus their energy on cultivating denser, more potent buds may make their business more profitable. Paying special attention to nutritional regimen, temperature and humidity needs, lighting design, and ventilation will set cultivators on the path to growing superior bud.

## DELIVER THE RIGHT TYPE AND AMOUNT OF NUTRIENTS

Giving cannabis plants the right type and dosage of nutrients during the vegetative stage and the first few weeks of flowering is imperative. Vegetative cannabis plants need a large amount of growth-fostering nitrogen and potassium paired with a lesser amount of phosphorus.

During the flowering stage, use nutrients specifically formulated for budding. At this stage, it's important to raise the levels of potassium and phosphorus. Growers should focus on cannabis-specific nutrients and avoid any product that is time-released, as those tend to deliver excessive amounts of nitrogen during the crucial flowering stage.

The growth of new stems and leaves slows significantly in the final six weeks of flowering, meaning the volume of nutrients should be cut back. It's especially important to scale back the amount of nitrogen, as too much not only can prevent buds from reaching their full growth potential but also create an unpleasant chemical flavor and aroma.

## MANIPULATE TEMPERATURE AND HUMIDITY

Although different strains of cannabis have slightly different needs, general rules of thumb apply to ambient temperature. Seedlings enjoy the range of 68 to 73 degrees Fahrenheit. Young cannabis plants in the vegetative stage prefer a warmer setting: 70 to 85 degrees. In the flowering stage, temperatures in 65- to 80-degree range are ideal. At night, most plants prefer temperatures between 68 and 75 degrees Fahrenheit. Colors like pink and




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Opening side vents on a greenhouse helps ventilate the space. (Photo courtesy of GrowSpan Greenhouse Structures.)

purple come out when nighttime temperatures are at the low end of the scale.

Balancing humidity also is crucial to maintaining optimal bud health, especially when growing indoors. Low humidity creates a welcoming environment for spider mites and can cause cannabis plants to wilt, whereas high humidity can trigger bud rot.

As cannabis plants grow, ideal humidity levels fluctuate. For greenhouse and indoor settings, seedlings prefer environments with a relative-humidity range of 65 percent to 70 percent, which allows for better water absorption through the leaves. A range of 40 percent to 70 percent humidity is appropriate for the vegetative stage, while flowering plants require a range of 40 percent to 50 percent to avoid powdery mold, mildew, and bud rot. The late flowering period requires the lowest humidity levels, between 30 percent and 40 percent.

During the final two to three weeks before harvest, consider using a dehumidifier to drop humidity levels as low as possible. Professional cultivators swear by the technique for increasing resin. Intense dryness also appears to prompt trichome production.

## EMPLOY SUPPLEMENTAL LIGHTING

When growing in a warehouse or a commercial greenhouse, high-intensity discharge (HID) lights, compact fluorescent lights (CFL), and light-emitting diode (LED) lights reign supreme. Before buying any of them, however, consider how much heat and light is needed and how much energy will be used.

HID lights encompass two types of bulbs: high pressure sodium (HPS) and metal halide. Metal halide bulbs emit a cooler, more bluish color, which is beneficial during the vegetative stage of growth. The orange and red spectrum emitted by HPS bulbs

stimulates budding and flowering. HID lamps of 400 or 1,000 watts are best for indoor cultivation. Due to their high heat output, HPS fixtures require a hood or other cooling or ventilation device to displace extra warmth. Professional growers often use a combination of HPS and metal halide bulbs to cover the whole light spectrum for the duration of the plant's life cycle.


CFL bulbs are affordable and cover the full visible light spectrum, making them a healthy source of light for clones and young plants. CFL bulbs also have a low heat output, and they don't use much electricity. Due to their small size, CFL bulbs are best suited for small spaces.

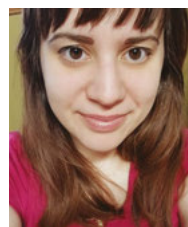
LEDs are receiving lots of attention because they produce more light at lower wattage and use less energy than traditional bulbs. They also produce less heat, meaning they can be mounted closer to plants. Make sure LEDs used for cannabis contain green and white light (some older bulbs don't). A shortage in those portions of the spectrum can lead to inefficient nutrient uptake.

## ENSURE GOOD VENTILATION

Good air circulation boosts CO<sub>2</sub> replenishment, aids in water and nutrient absorption, and helps strengthen stems. Indoors, oscillating fans placed above and below the canopy help ensure sufficient air exchange. Do not point fans directly at plants. Direct ventilation can dehydrate seedlings and result in wind burn, which makes leaves curl and droop.

"Growers often overlook lower canopy airflow, resulting in an abundance of diseases occurring on tight canopies that are not trimmed," explained Will Kacheris, a cannabis specialist for GrowSpan Greenhouse Structures. He recommends growers integrate an air distribution system. If a system already is in place but growers aren't seeing the results they desire, they should look for "perforated growing platforms such as expanded metal or open-pattern shelving," Kacheris said. "Eliminating standing water or oversaturated soils can help eliminate lower plant moisture buildup, as well."

Cannabis cultivation involves trial and error, but the effort will prove worth the investment. Growers want to produce the best bud possible, so mastering these four aspects of cultivation is essential. 



**JESSICA BATCHELOR**  
is employed by GrowSpan Greenhouse Structures. She nurtures a keen interest in how horticulture is affected by new technology.



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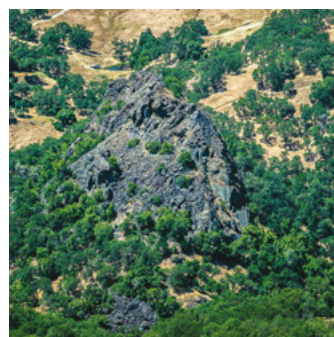


# TOO MUCH OF A GOOD THING

## THE WEST COAST IS SWIMMING IN WEED

BY CHRISTOPHER JONES  
PHOTOGRAPHY: MIKE ROSATI

The Dolce Canapa cannabis farm sits at the tippy-top of a mountain in Mendocino County, California, with stunning views that stretch for miles across the base of the Emerald Triangle. Steve Amato has owned the property for several years, and as he points down to various carved-out patches of land on the surrounding hillsides, he sounds both uneasy and hopeful.











*Above and right: Dolce Canapa.*

"These hills used to light up at night, with all the greenhouses that are scattered around," he said. "But these last two seasons we've seen fewer and fewer lights. I guess they're getting out of the game."

Whether they're reading the headlines in Oregon or the writing on the wall closer to home, California's small farmers are justifiably concerned about the overproduction of cannabis that has flooded the West Coast market and driven prices to unprecedented lows, particularly for outdoor varieties.

In Washington and Oregon, the average price for sun-grown cannabis has been cut in half over the past year, from about \$1,500 per pound to between \$700 and \$800 per pound. At the bottom end of the flower market, manufacturers of oils and extracts are paying farmers as little as \$50 per unit.

While the "glut" or "oversupply" has been a boon for recreational users and patients, who can buy inexpensive, lab-tested flower on the cheap, it has been a horror show for many small farmers who didn't anticipate such a swift, dramatic drop in prices. Cannabis may be one of the last frontiers for small farmers in the U.S., but whether they are able to survive against deep-pocket, industrial-scale competitors is the billion-dollar question. If the western states are interested in preserving their culture of small farms and craft brands, the open-ended licensing structure that paved the way for the glut must be scaled back or reimaged.

## ORIGINS OF A GLUT

To understand the oversupply on the West Coast, it's instructive to look at the flower markets on the East Coast, where states have taken a much more cautious and restrictive approach to licensing cannabis suppliers and retailers.

Florida licensed only five medical cannabis cultivators when the state launched its program in 2014. By August 2018, the number of licenses had risen to fourteen serving a patient population of more than 100,000. More than 400 entities applied for the four new licenses the Florida Department of Health plans to issue in 2018. The situation is similar in other states: Maryland, Connecticut, Louisiana, and Ohio, for example, have awarded a limited number of cultivation licenses to a handful of well-funded businesses that likely will be dominant players in those states for years to come.

"In states with limited licenses, the downside is that barriers to entry—expensive applications and licensing fees—are really high, so you don't have small farmers as a result," explained Amy Margolis, an Oregon attorney who founded and serves as director for the Oregon Cannabis PAC and the Oregon Cannabis Association. "On the West Coast, there was a fundamental decision to keep the barriers to entry low and allow longtime participants to have access to the market. Now the challenge is letting everyone in, because they will come in."

When Oregon legalized recreational weed in 2015, the Oregon Liquor Control Commission (OLCC) issued licenses to almost everyone who applied and qualified, resulting in nearly 1,000 recreational cannabis growers in the state. Hundreds more currently await approval. In 2017 alone, Oregon growers produced 1.1 million pounds of cannabis flower, according to the state's database. It's estimated less than half of the total was sold on the legal market. In response to the imbalance, the United States attorney for Oregon issued new enforcement guidelines directing prosecutors to investigate black-market activity. He also asked Oregon regulators to collect and analyze data about the state's cannabis production and distribution. The OLCC announced cannabis business applications received after June 15 would not be evaluated until 2019, giving the state more time to assess the supply-demand mismatch.

As growers in the state continue to produce and prices continue to fall, the situation is bleak for small businesses. Up and down the supply chain, many are laying off employees, closing farms, and losing significant start-up investments.



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“Both approaches [open versus limited licensing] have their pluses and minuses, and both have their challenges,” Margolis said. “In these open markets, some will win and some will lose. Of course, it does mean we have a hyper-competitive market right now.”

Some growers place the blame on the state for, in 2016, lifting a restriction that prevented out-of-state investors owning farms and retail shops. The move led to a new round of green-rush investment in large operations, further crowding small farms. Now, growers are wondering how long the war of attrition will last and how many of them will emerge on the other side.

Jeremy Moberg, owner of CannaSol Farms in eastern Washington and president of the Washington Sun growers Industry Association (WSIA), argued the Washington State Liquor and Cannabis Board (WSLCB) has failed to adopt sensible policies to regulate and stabilize the market. The glut in Washington appears to be every bit as bad as in Oregon, and the new track-and-trace program and overproduction are the big issues causing pain and adding excessive overhead for small farmers, he said.

WSLCB “engineered oversupply, and it’s an immoral act for them to coax growers out of the closet and then not manage the market so they can survive,” Moberg said, more than a little impassioned. “They have done nothing to try to improve the marketplace for growers, so not only are they encouraging



*Above and right: Dolce Canapa.*







*Dolce Canapa owner Steve Amato.*

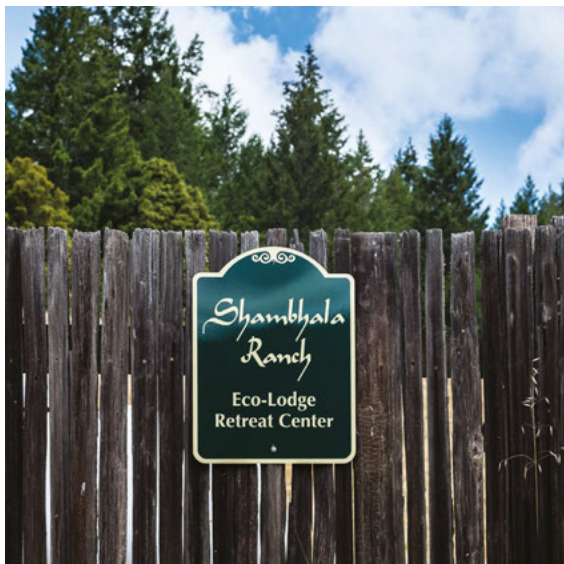
overproduction, but then they don't allow these farms to go out of business. They just sell the license, and the next dumb money comes in to further drive down prices."

As one of the first licensed growers in the state, Moberg was able to sell his premium, sun-grown flower for as much as \$12 per gram just a few years ago, when there was a scarcity of legal weed. But as the state approved more and more cultivation licenses, the oversupply drove prices into the ground. Now, Moberg sells his top-shelf flower for about 50 cents per gram, but 25 cents per gram is closer to the industry average, he said, with some growers settling for as little as 10 cents per gram.

When Colorado's medical cannabis market launched, Jay Czarkowski, founding partner of Canna Advisors, said his company successfully operated multiple cultivation facilities before opening the Boulder Kind Care dispensary in 2009. The vertical integration, along with a well-oiled commercial cultivation operation, allowed his company to offer flower at some of the lowest prices in the region, and his business flourished.

"Even after we had our first few grows and dispensary, I would go to city council meetings and stick up for my competition. I've always said if someone can come along and do it better than me, then I deserve to go out of business," Czarkowski said. "So, either up your game or go out of business. That's the way it is in any other industry."





*Above and right: Shambhala Ranch.*

As both an operator and a consultant, he doesn't view the situation on the West Coast as a glut, per se. A firm believer in free and open markets, Czarkowski predicts cannabis will take the same course as every other agricultural commodity and prices eventually will settle in at \$100 to \$200 per pound in states where there is healthy competition. In states like Connecticut, he noted, prices are inflated because the state has restricted cultivation licenses and there is not enough competition between growers.

### STRATEGIES FOR SURVIVAL

When Dolce Canapa's Amato moved from an agricultural region in New Jersey to Mendocino County, he already was familiar with the hard work and perseverance it takes to operate a small farm successfully. He also understands why and how the odds are stacked against him. After growing classic strains such as OG and Sour Diesel in the past, he is now focused on producing unique, sun-grown strains developed locally, in tune with the weather, terroir, and other variables that bring out the plants' full potential. He is optimistic about his farm's future, in large part because of the glowing feedback he gets about his flower when he takes his crop to distributors and retailers.

"We're all about the flavors and smells," said Amato. "If someone tells me this strain tastes really good, but this one yields more, I'll go with the flavor











*Flow Kana's Flow Cannabis Institute functions as a hub and incubator for more than 100 small farms.*

every time. Quality is where it's at; that's what gets the distributors' eyes open."

Amato's Watermelon Rancher buds from last season still have a sweet, fruity, melon aroma that is also lemony and tart, with flavor as tantalizing as its nose. His flower often is confused with indoor and greenhouse products, he boasts, and he has been able to sell his yield for \$1,100 to \$1,200 per pound over the past few years.

For small, "craft" growers like Amato, the Emerald Triangle is an obvious draw, with its storied history of cannabis cultivation and culture, a temperate climate, and potential business partners and services at every turn. Even so, many cannabis people fear for the future of Emerald Triangle growers and are skeptical the (primarily) small farms will be able to compete with impersonal behemoths funded by deep-pocket investors that are setting up industrial-scale greenhouse operations in the central valley and along the coast, most notably in rural areas around Monterey, Salinas, and Santa Barbara.

If the smaller farms are going to survive, they will need to adopt some of the same economies of scale large cultivation operations put in place on day one. One of the outfits leading the charge to help small farmers in Mendocino and Southern Humboldt counties is Flow Kana, which is betting big on the future for sun-grown cannabis on the North Coast.



*Many of the buildings on the former Fetzer Vineyards property will be converted for use as education and tourist venues.*

Located on the former Fetzer Vineyards property in Redwood Valley, California, the Flow Cannabis Institute sits on a sprawling eighty-acre property that is being transformed into a cutting-edge cannabis hub and incubator, of sorts. The company has raised about \$50 million to build everything it needs to process, test, manufacture, and distribute cannabis flower and other products from more than 100 partner farms. The first functional facility is dedicated to processing, sorting, and packaging flower, and the institute soon will start construction on testing lab and manufacturing facilities. Even the winery's old-timey saloon will be re-envisioned before long, offering tourists education classes and—assuming cooperation from state regulators—tastings, tours, and events.

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Flow Kana co-founder and Chief Executive Officer Michael Steinmetz explained the company's primary goal is to help farmers with every step of the process after their plants are harvested and cured. He said farmers who succeed in building successful craft brands will help preserve the legacy of sun-grown cannabis for years to come in the Emerald Triangle.

"When prices drop, we will survive because we've found efficiencies along the way," Steinmetz said. "Farmers have historically done everything in the supply chain, but we will start doing everything after post-harvest for them."

By offering small farmers tools to help them grow and analyze their businesses, Flow Kana means to provide insight that will help them adjust their business models as market conditions fluctuate and new opportunities arise.

"Transparency is big for us, between both our customers and our farmers. We have a lot of analytics we share with them—what strains are doing better in which areas and how their products compare to other brands," Steinmetz explained. "They really like that transparency and can use it to adapt to new markets."

"If they used to grow beautiful AAA flower, that may be a smaller part of the market now, whereas oil [extracts] is growing more every year," he added. "So, we want to help them be more strategic in how they use their resources."

Diane Czarkowski, founding partner of Canna Advisors in Colorado, tells growers to be flexible in order to survive in competitive, dynamic markets. Follow the price wave, she said, or find other ways to enhance the company's value.

"Over the past five to ten years, growers in Colorado have figured out ways to package materials that make them more attractive to labs," she said. "They will package raw material in different grades depending on what manufacturers want. This is a good way to differentiate yourself from competitors on how you're selling raw materials."

## GROWING PAINS

Tamar Maritz, the California regional director for BDS Analytics, tracks retail trends in the state's nascent adult-use market. Recently, she noticed



Flow Kana co-founder and Chief Executive Officer Michael Steinmetz.

an anomaly: Extractors in Humboldt County are sourcing much of their raw material (trim, popcorn buds, etc.) from large greenhouse operators in the central valley—300 to 400 miles away—instead of neighboring farms in the Emerald Triangle.

“Small farmers often can’t bring their costs low enough to meet the demands of wholesale [manufacturing] labs and retailers,” she explained. “Another challenge is the fact that a lot of the retail outlets have their own flower cultivation, so competing for branded flower space on shelves isn’t easy.”

California growers face other challenges associated with the growing pains of a newly regulated industry. With fewer than thirty qualified testing labs in the state, farmers are waiting as long as six to eight weeks for test results. There is also a severe shortage of licensed retail outlets. Maritz estimated there were about 3,000 locally authorized retail operators in the state in 2017—both storefronts and delivery services. By January 2018, the state had issued only 300 retail licenses, and by the summer that number had doubled to about 600—a far cry from the marketplace just last year.

The Emerald Triangle, encompassing Mendocino, Humboldt, and Trinity counties, historically has been the nation’s budbasket, supplying OG, Sour D, and

other distinctive Cali strains to buyers across the country. But the loose-knit community of guerilla, outlaw farmers didn’t grow their market playing by any established set of rules. Sure, there are unwritten codes of conduct, but those are only loosely followed and always have been open for interpretation in a black market that created strange bedfellows, to say the least. But after California voters overwhelmingly adopted Proposition 64 in 2016, legalizing cannabis for recreational consumption, the game changed dramatically. With strict new regulations, taxes, and formalized business structures, small growers are faced with some tough choices about their future.

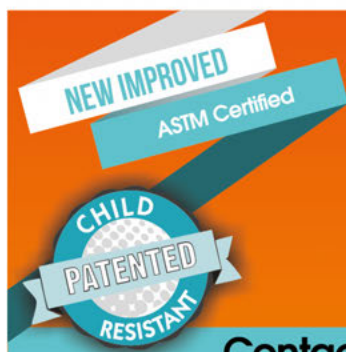
Whether California is on the same path toward overproduction as its West Coast neighbors is an open question, but the similarities in the licensing process and market dynamics have created an atmosphere of fear and anxiety, with many farms in the Emerald Triangle shutting down or clinging to their legacy by supplying a thriving black market that likely will take many years to diminish.

Of the 7,182 cultivation licenses in the U.S., 53 percent are in California. About 20 percent of California’s 3,844 cultivation licenses are held by just twelve licensees. Companies that control “stacked” licenses can operate mega-farms and push their



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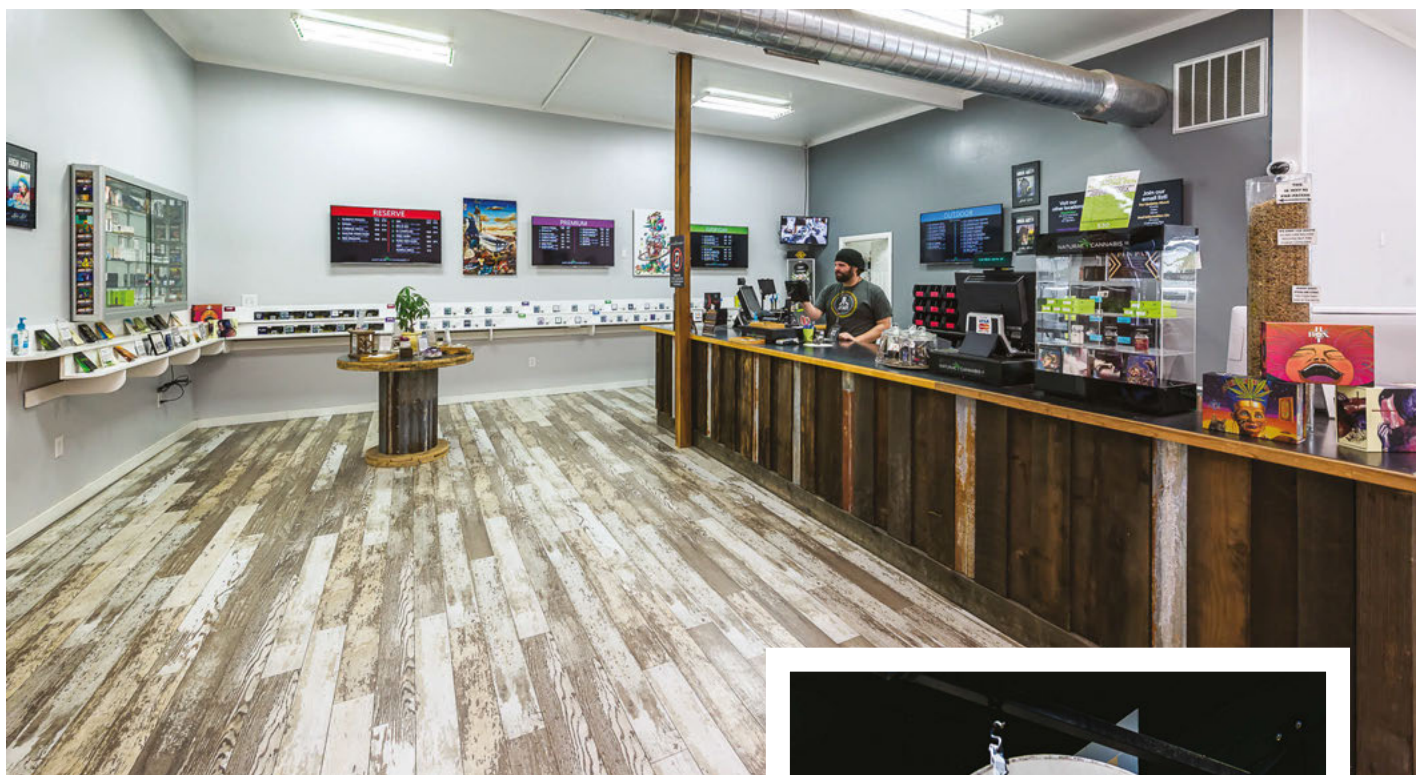


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*The MendoCann dispensary in Hopland, California, sources products from local farms.*

weight around in the market by negotiating bulk deals with manufacturing labs, testing labs, distributors, and retail outlets. The irony: Proposition 64 was meant to prevent just such a scenario.

In 2016 and '17, as Californians were debating recreational legalization, there was widespread support for protecting the small farmers in the Emerald Triangle. Those farmers built the industry over the past thirty to forty years, and small communities heavily rely on their revenue. When the authors and proponents of Prop. 64 were trying to gather support for the initiative, they pointed to a provision meant to protect small farmers during the first five years of adult-use legalization. However, soon after voters passed Prop. 64, the California Department of Food and Agriculture (CDFA), which issues cultivation licenses, began allowing companies to accumulate multiple licenses for the same property and establish industrial-scale cultivation operations. The process is known as “stacking.” In response, the California Growers Association filed a lawsuit accusing the CDFA of undermining the intent and spirit of Prop. 64 by allowing companies to operate with an unlimited number of stacked licenses.

Many large cultivation companies in California are staking their claims in the traditional agricultural areas along the central coast, regions well-suited to produce large volumes of raw material and with the



infrastructure and labor force to support industrial-scale farms. Organic Green Farms, for instance, holds 147 licenses. Together, the licenses allow OGF to grow 1.5 million square feet of canopy on farms near San Luis Obispo and Santa Barbara, an area with a favorable climate for cannabis cultivation and smack-dab between the two biggest retail markets in the state.

In contrast, legacy farmers chose their land for the opposite reason: In the remote mountains of the Emerald Triangle, it is easier to conceal large grows, tap into rivers and streambeds, and evade law enforcement. In the past, federal and state officers were the primary threat to farms in the Triangle—and that longstanding game of whack-a-mole is far from over—but now-legal farmers face obstacles, challenges, and risks of a different order.



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Down the road from Dolce Canapa, in a serene, heavily-wooded valley near the California coast, Stuart and Tara Marcus have cultivated cannabis since 2011, when they received a sheriff's permit for a grow on their Shambhala Ranch. The ranch also serves as a haven for small groups celebrating weddings, yoga retreats, and other events. As a former chairman of Mendocino County's tourism board, Marcus sees small cannabis farmers' plight and compares it to the early days of drawing tourists to Mendocino.

"I feel small growers will have to really start to work just like small lodging operators and market our county," he said. "From a practical standpoint, unless you're really, really talented as a grower, it's going to be hard to market small farms. My neighbors around here are bailing out like crazy, and I think it's going to be devastating to a large group of people."

In addition to the challenges inherent in competing with larger operations, Marcus is frustrated by the county's flip-flopping cannabis regulations.

"The thresholds to licensing are painful, to say the least, and it's beyond demanding," he said. "This is a very, very shaky business to get into, so if I didn't have a history on this ranch, I would never think about going into cultivation."


Under California's new regulations, growers, manufacturers, and suppliers must use a distribution company to deliver their products to testing labs and retail shops. That adds another 15 percent to 30

percent to the cost of doing business. Some small farmers argue the requirement is unnecessary and only makes it harder for them to compete against bigger players, who often have the resources—and license—to operate their own distribution company.

Despite all the hurdles, the green rush in California marches on, with investors pouring in from all over the United States. Canadian companies, too, seek to establish a foothold in what BDS Analytics expects to be a \$5 billion market in 2019.

Whether the West Coast ever gets its overproduction issues under control probably has less to do with state governments than with the feds. Ultimately, the only thing that will help stabilize markets and temper glut is an end to federal prohibition. If and when that happens, the West Coast's oversupply will be able to provide the whole country with top-notch, sun-grown weed.

In Oregon, as the state wades through hundreds of new applications for would-be growers, the farmers already licensed and producing continue trying to figure out how to survive in a market that's been topsy-turvy and uncomfortably competitive.

"I try not to be dire and remind people we're subject to the same whims as any other agricultural commodity, but my hope is we'll see the market adjust itself so people can survive," said Margolis, the attorney. "It's a 'don't panic' message. I know that's hard to hear, because some people are losing everything, but I'm hopeful there will be some stabilization." 



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# NO ORDINARY JOE

*Joe Hodas has high hopes for the expanding portfolio of services at General Cannabis Corp.*

BY ROB HILL

**J**OE Hodas says he was “amazed” when the cannabis industry came calling in 2013. His resume included stints as a public relations and marketing executive for such brands as Smashburger, Quiznos, and Frontier Airlines. But Dixie Elixirs’s Chief Executive Officer Tripp Keber was persuasive, so Hodas left the security of mainstream America and embarked on a whirlwind adventure as Dixie’s chief marketing officer. “There were many days when I came home and wondered what the hell I had gotten myself into,” he said. “For every historic moment there was an equal moment of fear, uncertainty, and downright immaturity.”

Although Hodas had worked for lean start-ups, he was taken aback by the utter lack of resources and infrastructure when he arrived at Dixie’s downtown Denver headquarters. But the marketing team pressed forward, doggedly building the company into one of Colorado’s most recognizable brands while also expanding into five other states. Although “many people contributed to Dixie’s rise,” Hodas does take credit for one thing: having the *cojones* to jump into the cannabis industry before his corporate-America peers. “I do believe it was upon the shoulders of brands like Dixie and others that this industry was able to grow to where we are today,” he said. “I am pretty confident in stating that we single-handedly changed the minds of many regulators, investors, and consumers with the brand we created.”

In early 2018, General Cannabis Corp. recruited Hodas to fill the position of chief operating officer. He jumped at the opportunity, he said. The GC job allowed him not only to flex his operational muscles but also develop his managerial skills. General Cannabis Chairman Michael Feinsod had just raised a new round of funding, paid down the company’s debt, and was ready to grow—fast.

“General Cannabis is fully intent on becoming not only a strategic hub of growth and innovation for the industry, but also a partner of choice on a national level,” said Feinsod. “I have known Joe for the better part of his cannabis industry career, and I am confident that with his leadership and experience, both within and outside the

industry, he will help us achieve those goals in a relatively short period of time.”

General Cannabis launched in 2014 as a real estate and investment organization. With its acquisition of Iron Protection Group (IPG), Chiefton Supply Co., and Next Big Crop (NBC), GC quickly morphed into a service provider. The company announced revenues of more than \$1 million for the second quarter of 2018—an increase of 34 percent. Year-to-date revenues were up 32 percent.

“With a suite of goods and services for customers across the cannabis industry, we are realizing the benefit of providing a synergistic set of solutions to help cannabis businesses realize their growth potential,” Hodas said. “Our revenue growth reflects the effectiveness of our focus on driving sales and the quality of our deliverables.

“It’s an exciting time at General Cannabis,” he added. “We have a great foundation with our existing lines of business. We have a strong balance sheet that allows us to look at deals at every level of the industry that could potentially benefit from our mix of funding and back-office skills and support.”

## **mg: WHAT GOALS HAVE YOU SET FOR SGENERAL CANNABIS?**

**JOE HODAS:** My goals are pretty straightforward and intimately linked with us being publicly traded. We have great assets and a strong team in place. My goal is to help each of the divisions find efficiencies, grow their revenue, and find sustainable profitability—all of which is critically important, of course, as a publicly traded company. But I am also there to create a brand that is identifiable, both for GC corporately and for each of its divisions. All of that is linked to our plans for expansion as I help the team identify and manage future additions to our portfolio of companies.

## **HOW DO YOU PLAN TO APPROACH THOSE GOALS?**

I think the most important thing I am trying to implement isn’t exactly a cannabis experience. It’s simply discipline in effective decision-making. We have smart but young directors managing our business units, and my job is to be



the gray-haired guy in the room saying, “Hold on. Have you thought about...?”

But the other thing I am trying to instill is what I call the currency of connectivity. I have been able to develop some really great, long-lasting, and strategic relationships in this business over the past five years, and I want to continue to find ways to work with the best in the industry.

### **HOW MANY EMPLOYEES DOES GENERAL CANNABIS HAVE NOW? WHAT’S THE COMPANY CULTURE LIKE?**

Right about 100 [employees]. There is no hierarchy at GC, and even less ego. We all have the same goal in mind: to create a company that we, and others, want to work for and with and to do that profitably and to the highest levels of regulatory and [Securities and Exchange Commission] compliance. It’s important to note that Michael Feinsod, our chairman, is a big part of that team and vision.

### **YOU OFTEN DESCRIBE GC USING THE WORD “SYNERGY.”**

We have a very robust back-office support functionality that allows each of our businesses to focus on the things they do best: security, apparel, and growing and selling cannabis. Meanwhile, we provide the [human resources], accounting, marketing, and strategic support to help them grow. Combine that with a solid amount of capital and no debt, and we can be a catalyst for growth in any and every area of this industry.

On the back end, we get to weave the synergies among them all. It works really well right now as we bring on new clients with Next Big Crop, then perhaps provide branding apparel work via Chiefton and, of course, support their security needs from planning to application to implementation [through Iron Protection Group]. I have yet to look at a potential acquisition that wouldn’t be accretive to that value proposition. In addition, we are publicly traded and we are maniacally focused on acting as if we are a multi-billion-dollar company traded on a major index. It didn’t take me long to realize the value that can bring to our partners, employees, and shareholders.

### **WHICH DIVISION BRINGS IN THE MOST REVENUE?**

Iron Protection Group drives the largest share of our revenue. But in terms of growth, Next Big Crop has the greatest potential, as their deals are pretty large in scale and scope. A few additional deals a quarter could easily double their revenues.

### **CHIEFTON SUPPLY RECENTLY SIGNED A DEAL TO SUPPLY THE NATIONAL RETAILER TILLY’S WITH HEMP APPAREL.**

We have a brand, and a hemp apparel strategy, that are really hot. People love the Chiefton brand, and the team behind it is doing great things in bringing the hemp and cannabis lifestyle to a more mainstream audience. With Chiefton, we have an opportunity to bring the brand to a broad consumer audience that none of our other companies has access to. We plan to be at a few upcoming mainstream fashion and apparel trade shows, and I have a feeling we will land a few more exciting distribution deals as a result.

### **IT SOUNDS LIKE YOU’RE BULLISH ON HEMP.**


Absolutely! As consumers and businesses become more educated about the advantages of hemp—antimicrobial, less resource-intensive to produce, more durable—demand is only going to trend up. And we know regulation follows the money, so I would expect we will see commensurate loosening of some of the restrictions hemp farmers have faced.

### **A FEW MONTHS AGO, IPG LAUNCHED IN NORTHERN CALIFORNIA. HOW ARE THINGS PROGRESSING?**

We are rapidly building that market out. In fact, we just hired a new director of the operation in California. And the Next Big Crop is actively working on no less than a half-dozen high-profile applications and large-scale builds in states throughout the U.S. In addition, we are about to fix our sights on potential international expansion.

### **WHAT SECTORS OR VERTICALS IS GC EYEING FOR EXPANSION?**

Acquisitions are key to our growth and success, but I have come to learn just how difficult they are. In my short few months here, there have been many starts and stops in the process, in some cases caused by the legal and SEC hurdles that a publicly traded company can face, and in other cases a result of many in the industry not understanding their true value as a company.

As for sectors and verticals, I can’t give away too much. But I will say that I have learned a new philosophy here at General Cannabis: Opportunity abounds, if you know how to identify it. 

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# It's Not Easy Being Green

CULTIVATORS ARE SEARCHING FOR A PURE BALANCE BETWEEN ECOLOGY AND COMMERCE.

BY ROB HILL

**T**HE CANNABIS INDUSTRY is making history on multiple fronts—from health and wellness to the economy to gastronomy and even tourism—but nothing will have as long-lasting an impact as the industry's shaping of the green movement.

Well before the dawn of modern cannabis legalization, weed farmers in northern California were obsessed with the soil, sun, nutrients, light, water, critters, and weather. They have experimented for decades with off-the-grid, do-it-yourself ways to preserve the land they love while also growing the most potent herb known to man. They weren't the first to develop a special relationship with the plant. As far back as 10,000 B.C., China's Chou Dynasty began utilizing cannabis for warfare, apparel, medicine, paper...and to "purify the soil." Emperor Shen-Nung (c. 2700 B.C.), the father of Chinese medicine, noted planting sativa ("ma") produced positive effects "on the rich, silken soil." According to Shen-Nung, vegetables, animals, and minerals flourished because sativa's feminine, or yin, and masculine, or yang, properties were especially harmonious.

More recently, the infamous outlaw cannabis farmers of the twentieth century who chiefly operated in the thick forests of California's Emerald Triangle quickly took note that pungent, bewitching cannabis did not deplete the earth and its natural resources, as some had warned it would. Instead, weed enhanced its cultivation area—if grown in harmony with nature. Guerilla cultivators were some of the first to try soil-friendly regenerative agriculture practices, thereby becoming unwitting trailblazers for the eco-environmental movement that sprouted in California during the 1960s.

The modern cannabis marketplace is a vastly different world. Commercial and investor pressure, thin profit margins, supply-line deadlines, compliance earthquakes, and fickle consumers conspire to shove cannabis off its earth-friendly footing. The question is: Can today's cannabis industry advance ecological vigilance and maintain a solid balance sheet?









## LIGHTING UP

For the average cannabis farm, electricity is the second highest expenditure. In July, New Frontier Data partnered with Scale Microgrid Solutions and the Resource Innovation Institute to suggest ways in which the industry may be able to reduce its reliance on resource-intensive cultivation practices. According to a statement from the partners, the project will address issues with actionable data based on “the most comprehensive analysis of current energy consumption.” The study will examine hundreds of cultivators’ and operators’ energy consumption across North America and provide operational insights and cost indicators that can be used immediately to assess efficiency and profitability at the root of the ecosystem.

“Baseline usage data is the key for cannabis producers to see where they currently stand and to help them make decisions about best practices and technology upgrades that drive a lower cost per pound,” said Derek Smith, executive director for the Resource Innovation Institute.

Right now, the easiest way to lower energy costs and help the environment is to grow outdoors, under the sun. According to John Downs, director of business development for The Arcview Group, the cost per pound of indoor, outdoor, and greenhouse growing is substantially different because the energy needs

of each grow type are vastly different. “You can’t downplay how much impact energy efficiency has and energy costs have for cannabis producers,” he said. “These energy-related costs can account for as much as 50 percent of what it takes financially to run an indoor grow.”

Farmers who prefer to grow indoors or in greenhouses may be able to reduce costs and leave a much smaller carbon footprint by employing new technologies. Replacing traditional lights with light-emitting diodes and installing sensor systems, algorithms, and machine learning can help improve efficiency. U.S. Department of Energy studies have shown employing LEDs can knock up to 40 percent off farmers’ energy costs. Tack on additional next-generation technologies—like energy-conserving heating, ventilation and air-conditioning systems, and vertical growing—and savings could reach 55 percent.

Granted, the upfront cost for switching to LEDs can be daunting, and paying off the investment can take up to two years. In the long run, however, LED systems solve a big dilemma: how to maintain the bottom line while remaining a conscientious steward of the planet.

A number of companies have stepped into the cannabis space with LED systems appropriate for indoor grows. Galaxyhydro offers nine spectrum groups that mimic the sun and provide optimal



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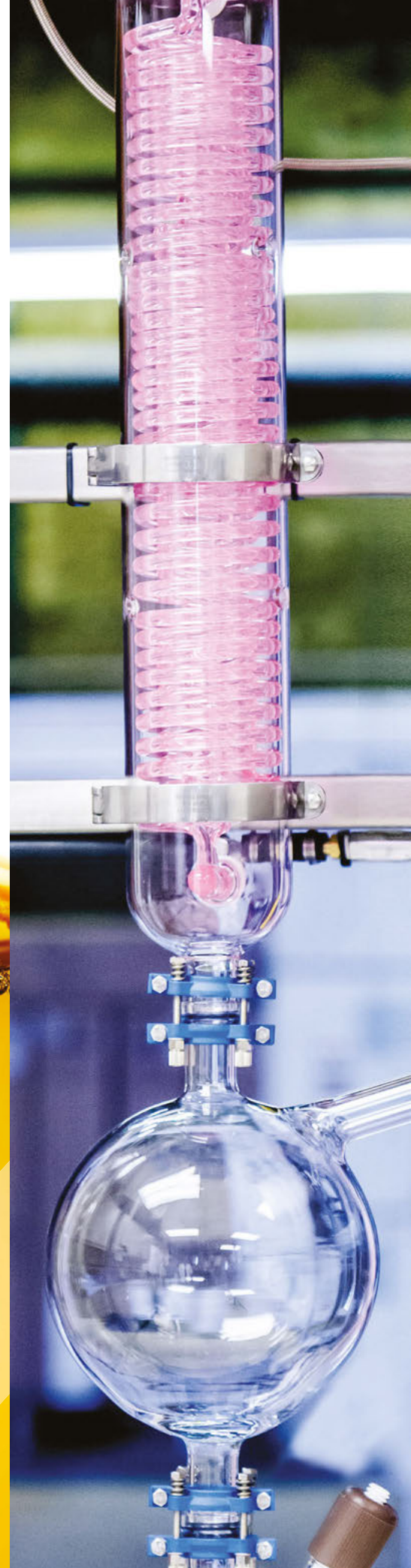


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lighting for all growth stages. Viparspectra's original product, the Reflector Series 300W LED grow light, is full spectrum, has a daisy chain option, and offers five-watt diodes. Not to be outshone, the new Viparspectra Reflector Series 450W offers lighting for each period of plant growth, self-cooling fans, and conventional warmth sinks for quickly dissipating heat. For sheer power and wattage, the Dimgogo 1000W is impressive. New to the market, the product comprises triple-chip 10W LEDs, which are brighter and more efficient than two-chip 3W or 5W LEDs. In addition, the product incorporates a robust cooling framework that includes two fans and a massive warmth sink; the light uses about 185W to cover a five-foot by four-foot growing space.

During a recent review of his balance sheets, Jesse Peters, co-founder of Oregon's Eco Firma Farms, discovered much of the reason for the operation's higher-than-expected profits came from simply converting the lighting system to LED. An eco-progressive farm even before the switch, Peters said Eco Firma now spends about half what his indoor-growing peers spend. In a time when wholesale flower prices are plummeting, Peters has become an enthusiastic advocate for the LED movement. For him, it's all about trying new things and being patient. "The hardest thing with growing is stepping out of your comfort zone without a war chest to make mistakes with," he said.

Resource Innovation Institute's Smith is an advocate, too. As he travels from farm to farm advising growers how to become more energy efficient, the first thing he tells them is to invest in LEDs because sooner or later their company's survival will depend on the move. "If you're not figuring out how to be energy-efficient as an indoor cannabis operator, your time in the competitive spotlight likely will be short-lived," Smith said.

The LED era is in its infancy and will continue to innovate, according to Nate Lipton, chief executive for leading online cultivation supply shop Growers House. "In the past few years, our sales of LED grow lights have increased sevenfold," he noted "Those that make the switch to LED are suddenly able to spend less money on cooling, water, and nutrients. And by giving farmers the option of safely stacking multiple layers of plants in a single warehouse, LEDs allow growers to make far more money than they could with [traditional high-intensity discharge lamps] in the same amount of space."

## BUGGING OUT

While many cannabis farmers use synthetic pesticides for a cost-effective and robust harvest, more environmentally conscious growers employ predatory bugs, bacteria, and fungi to create an optimal environment that not only resists pests but also sequesters carbon and repopulates flora. For Tyson Haworth, a veteran of the organic produce industry and a cannabis cultivator at SoFresh Farms, natural pest control is only the start of creating sustainable cannabis agriculture. "It's not enough to not be bad when it comes to sustainability," he said. "We want to be good. We want to be part of the solution."

On his quarter-acre farm in southern Oregon, Haworth is laser-focused on doing just that. For instance, he puts his plant trimmings in vats with lactic acid bacteria, which turn the waste into nutrient-rich plant grub. According to Haworth, any trimmings that aren't used for fertilizer go into giant compost heaps dotting the property. Chickens take care of the rest. "My chickens dart from their coop to the mounds, turning the compost and pecking the soil," he noted.

Instead of growing three rounds of large plants in a year, Haworth grows five rounds of smaller plants. He said dividing the heat and energy by five produces a smaller footprint. "Excess heat from the farm's indoor grow space is pumped into a separate room where the cannabis seedlings grow, reducing the need to heat that space with more propane," he said.

The roof of his barn incorporates gutters that funnel rainwater into a reclamation system. The dehumidifiers and air-conditioning units also serve a dual purpose: A condensation pump takes the excess moisture that collects on metal exteriors and siphons it into the reclamation tanks to help reduce the farm's dependence on groundwater. To say Haworth, one of the first farmers to earn a Clean Green certificate, is obsessed with waste management is an understatement. "I think about that all the time," he said. "What's your waste source, and how can you turn that into a revenue stream or help with an expense?"

While not every farmer is ready to go to the lengths Haworth has, there are little things almost all growers can do that may make big differences. For instance, Epsom salts (hydrated magnesium sulfate, or  $MgSO_4 + 7H_2O$ ) have been used for centuries to treat human ailments and provide a clean tool for gardeners experiencing magnesium deficiencies. Coco coir is another option. A by-product of manufacturing



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coconut products, the husks retain water while allowing plenty of oxygen to reach plant roots. Substituting insects and predatory nematodes—earthworms, ladybugs, praying mantis—for chemical pesticides is efficient, fun, and environmentally sound. Earthworms dig tunnels under the soil, allowing better oxygen flow and significantly reducing fungal infections and disease. And according to cannabis cultivator writer, editor, and author Danny Danko, switching to oxygenated compost tea can work wonders.

“Steep the compost in a bucket of water utilizing an old stocking,” said Danko. “Then oxygenate the tea for twenty-four hours using an air-pump and air stones from an aquarium supply shop to fully activate the beneficial bacteria and microbes. This mild nutrient will feed your plants and protect them from pests and disease.”

Going veganic is in vogue. Studies have shown one-third of Earth’s greenhouse emissions come from industrial animal agriculture, which causes environmentally destructive forces like deforestation, ozone depletion, and massive water waste. Replacing animal byproducts like bone meal, blood meal, and fish meal with kelp, seaweed, worm castings, humic acid, and mycorrhizal fungi makes a world of difference for the planet, especially when mixed with companion planting. Companion planting is a natural

way to reduce the use of toxic materials: Placing plants such as clover (nitrogen fixing), borage (uproots trace minerals), basil (repels slugs), foxglove (attracts insects that kill white flies), garlic (natural fungicide and pesticide), and marigold (cannabis-devouring insects hate it) in cannabis fields can provide essential ground cover for the plants.

## AT WHAT COST?

How many cannabis farmers really have the desire and wherewithal to go green? Timothy Hade, chief operating officer and co-founder of clean technology company Scale Microgrid Solutions, doesn’t believe enough cultivators are concerned with greening their grows. He noted while many are working to reduce their energy consumption in order to decrease expenses, some see no need to change. Ultimately, that may harm their bottom line.

“In most states, retail prices are still north of \$1,200 a pound. At that price point, managing costs isn’t really a top priority for cultivators,” Hade said. “Cultivators are primarily focused on maximizing production, regardless of cost. But retail prices in all states are going to fall off a cliff as the cannabis market matures and regulations ease. Once retail prices hit \$600 a pound, then energy costs start to matter a lot.”


That’s why the partnership between New Frontier Data, Scale Microgrid Solutions, and the Resource

Innovation Institute matters, according to New Frontier founder and Chief Executive Officer Giadha Aguirre De Carcer. "Data is the basis to any business's ability to optimize," she said. "In the cannabis industry, where electricity is the second highest expenditure in a cultivation operation, lowering energy costs can make the difference in whether a business survives in this increasingly competitive environment. Wholesale pricing has now dropped by over 50 percent in most key markets across the United States. Having the ability to manage cost could not be more timely for both new and existing businesses touching the plant."

Absent baseline usage data cultivators are operating in the dark. As more growers and regulators become educated about the cannabis industry's energy footprint, the more innovation will thrive, which means healthier nutrients, more efficient lights, less water use, and a reduction in land damage. According to De Carcer, the partnership's reports will inform farmers with real-time, data-driven solutions for vital issues ranging from average energy usage per square foot of flowering canopy to per-gram production energy costs, among others. She made clear the data will affect all aspects of the industry, from the money men to growers, manufacturers, and consumers.

"Investors will be able to assess investment opportunities and determine how efficient those opportunities are in their operation," De Carcer said. "Regulators will now have the broadest benchmark associated with current cannabis energy and resource usage. Finally, operators can determine how they compare to the rest of the industry when it comes to energy use and efficient cultivation."

But ready data isn't the only obstacle. According to Haworth, one of the major bumps in convincing farmers to jettison old habits in favor of more sustainable practices is that they are stubbornly set in their ways. "We're trying to be a leader and show people it's possible to not use pesticides when you have spider mites," Haworth said. "We've had them all, and we haven't used pesticides, and we're still growing Cannabis-Cup-winning flowers. I just don't think a lot of people know that's possible."

Hade was more circumspect. "Long term, energy management is probably the single biggest driver of economic success in the cannabis market," he said. "Today, energy costs represent anywhere from 25 percent to 50 percent of a cultivation facility's total operating costs. That percentage will almost certainly go up as the cultivation process becomes increasingly automated, which is already happening." 

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# WORKPLACE DRUG POLICIES: WHAT CAN-A-BUSINESS DO?

*Evolving legal, societal, and political landscapes create potential landmines for employers.*

BY DANIELLE H. MOORE AND NICOLE E. STENOISH

**L**EGALIZED cannabis is quickly making an entrance into all corners of the United States. Nine states and the District of Columbia have legalized recreational use; an additional twenty states allow medical marijuana. The numbers likely will grow as the societal and political perspectives on legalization continue to shift.

The ever-changing landscape makes it difficult for employers to comply with both state and federal laws and has caused many to question whether their policies and practices should be revised. Employers should evaluate their workforce drug policies and assess whether they are prepared to handle the consequences in the wake of increased legalization and decreased stigma.

## SHIFTING STANCES ON LEGALIZATION AND USE

Despite an increasing number of states legalizing cannabis, the substance remains an illegal Schedule I drug under the Controlled Substances Act. In January 2018, U.S. Attorney General Jeff Sessions suggested a willingness to enforce federal law when he rescinded

the Obama-era Cole Memo, which had assured minimal federal interference with legitimate businesses in states that had legalized marijuana.

However, several new developments indicate the federal government may be changing its tone. For the first time, the Food and Drug Administration approved a cannabis-based medication intended to treat severe seizures in children. Additionally, Senate Minority Leader Chuck Schumer introduced a bill to decriminalize marijuana under federal law, and bipartisan lawmakers introduced bills in both the House and Senate to protect states that have legalized cannabis. Furthermore, President Donald Trump promised a senator from Colorado he would support efforts to protect states, and he recently indicated he likely will support a congressional effort to end federal prohibition.

The moves parallel a shift in the public's opinion about cannabis. In October 2017, Gallup poll results revealed 64 percent of Americans support legalization.

## STUDY OF CANNABIS USE BY OCCUPATION AND INDUSTRY

Legalization's evolution has led to increased research about the public's cannabis consumption. The newest example examined marijuana use in Colorado—the first state to decriminalize recreational use—and the findings may be useful for employers across the country.

The Centers for Disease Control and Prevention recently published data about current marijuana use in Colorado and categorized that data based on industry and occupation. The study examined information provided by more than 10,000 Colorado workers aged 18 or older during 2014 and 2015. The findings revealed 14.6 percent of Colorado adult workers were marijuana users. The highest prevalence of marijuana use was among young adults (29.6 percent), males (17.2 percent), those working in the accommodation and food services industry (30.1 percent), and those preparing and serving food (32.2 percent).

The study also revealed some industries and occupations with surprisingly higher-than-average cannabis use rates. For



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example, adults in many professional industries reported higher-than-average marijuana use: life, physical, and social science (20.6 percent); sales and related (19.4 percent); legal (15.9 percent); and management (15.2 percent).

Workers in some safety-sensitive occupations, which typically require routine employee drug testing, also showed higher-than-average use patterns: farming, fishing, and forestry (16.5 percent); construction and extraction (16.5 percent); and healthcare support (15.8 percent). At the same time, reported marijuana usage by workers in other safety-sensitive industries remained low: transport and warehousing (10.2 percent); mining, oil, and gas (5.2 percent); utilities (5.8 percent); and healthcare and social assistance (7.4 percent).

### WHAT SHOULD EMPLOYERS DO?

Because this area of law is constantly evolving and continues to be tested in courtrooms across the country, employers must understand their rights and duties and decide what position to take.

Although every state is different, marijuana is still federally illegal and employers generally are allowed to require a drug-free workplace and enforce zero-tolerance policies. Employees can be disciplined—or even terminated—for coming to work under the influence, possessing marijuana on company premises, or using marijuana while at work, even in states where marijuana is legal.

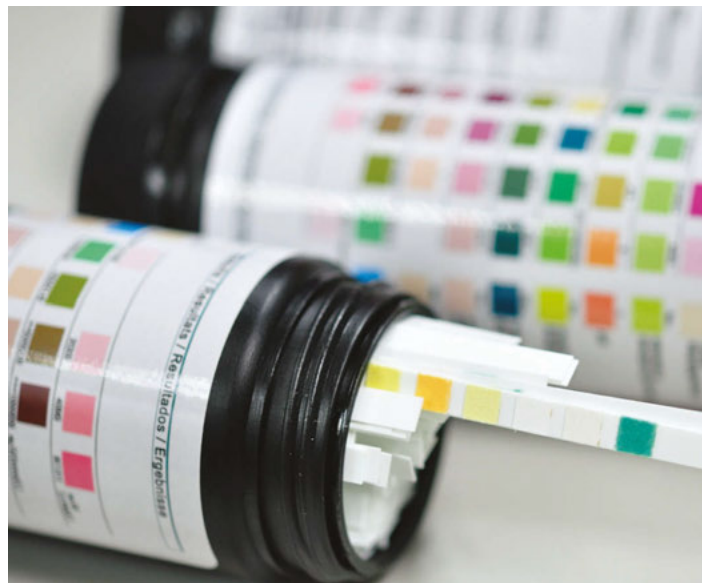
But you need to tread carefully when disciplining medical marijuana users. Eleven states have specific laws protecting medical cannabis patients from employment discrimination. In 2017, cannabis patients in Massachusetts, Rhode Island, and Connecticut won lawsuits against companies that rescinded job offers or fired workers because of positive tests for cannabis.

Typically, employers can require drug testing at different times—including pre-employment, randomized, reasonable-suspicion, and post-accident—depending on their state laws. However, with the changing landscape, employers must consider a number of drug-testing issues. First, in certain states, employers may need to consider accommodating medical marijuana use depending on the employee's position and needs.

Second, many employers who require pre-employment drug testing have reported difficulty finding eligible candidates. Some employers who need to stay competitive are considering softening their drug-testing policy or taking cannabis off the testing panel. At the same time, however, softening the stance may not be a viable option for government contractors or employers with safety-sensitive positions. Consider your business needs and your stance on cannabis in light of what's best for your company.

Finally, you must grapple with the fact the science used to test for marijuana has been slow to catch up with increased legalization. While there are methodologies in development, there is no test for marijuana inebriation. An employee may test positive for cannabis even if they used the drug days before their shift began and were not impaired on the job.

This creates a potential legal landmine for employers who wish to discipline employees believed to be impaired on the job. Even if an




employee tests positive, it could be difficult to show that employee was under the influence while working. Until testing technology becomes available, consult counsel before taking any definitive steps.

### CONCLUSION

As the CDC study shows, marijuana use is prevalent across industries and occupations. To determine the best drug policies and practices for your workforce, you must consider a variety of factors. In which industry does your company operate? Are workers in that industry more inclined than others to use cannabis? What are the state marijuana laws where you operate?

Consider these issues now so you are not caught off-guard and unaware of changes to marijuana-related employment law, especially as societal and political perspectives shift toward acceptance. Most importantly, ensure you can find the balance between compliance with state and federal law and what is right for your business.

Until the conflict between state and federal law is resolved, you should: 1) stay up to date on quickly evolving marijuana laws; 2) develop state-compliant workplace drug policies that are appropriate for your company, potential applicants, and employees; 3) apply your marijuana policies uniformly; and 4) contact counsel if any specific concerns or incidents arise. 



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HIGHERSTANDARDS.COM

### PIKES PEAK PRESS

Engineered to provide years of reliability, Pikes Peak Press offers complete control over heat-plate temperatures, press time, operating pressure, and actuating speed. The product features 10-inch by 3-inch heat plates with dual pressure system and a digital readout for operating pressure.

GOPUREPRESSURE.COM

### THE ORIGINAL CURIDOR

Curidor's sophisticated, innovative designs provide appropriate temperature and humidity for prolonged storage of personal herb and concentrates collections. The Original comfortably stores up to two pounds of jarred dried flower and looks right at home in settings from the bedroom to the boardroom.

CURIDOR.COM

### PAPES

From a premium Canadian rolling paper supplier comes top-quality rolling papers for the original, the active, and the progressive smokers who are defined by their lifestyle, not their habits. The company's mission includes promoting and educating consumers about responsible cannabis use.

PAPES.CA





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## HORTICULTURE & GROWING

### RAINFOREST SYSTEM

Rainforest offers an innovative way to propagate cuttings and quick-start seeds, seedlings, or transplants. The vortex sprayer lifts and oxygenates nutrient solution, then distributes it over the cutting base or root zone. Compatible with the company's Texas Controller for large installations.

GENERALHYDROPONICS.COM

### ZIEL APEX RF

Chemical-free, APEX RF treatment allows cannabis to retain cannabinoids, potency, and terpenes. The system can treat up to twenty pounds of cannabis in less than fifteen minutes. Rapid internal oscillation of polar molecules generates heat volumetrically, then proprietary processing kills pathogens including yeast and mold.

ZIELCANNABIS.COM

### BUDDHA BLOOM

Distinctive blends of organic ingredients are harvested from natural sources around the world by communities engaged in sustainable extraction and production. Buddha Bloom reportedly promotes vigor, increases yields, and enhances the quality and flavor of soil-grown plants during their growth and bloom stages.

AURORA INNOVATIONS.COM

### DIMLUX EXPERT SERIES 630W DUAL FULL-SPECTRUM LIGHT

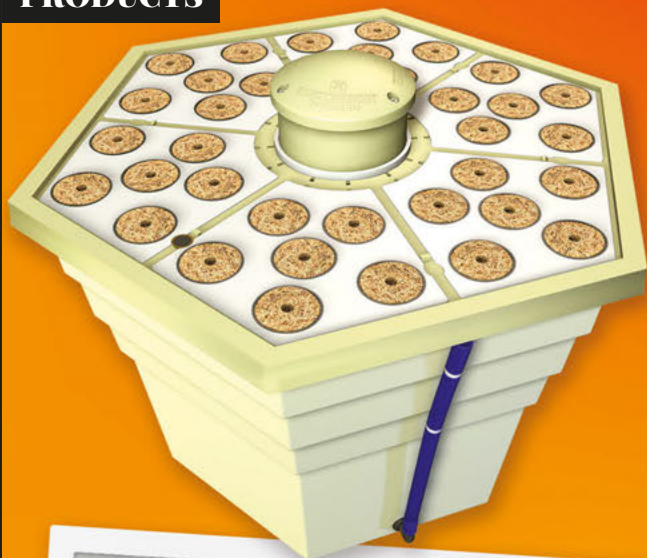
Designed according to the Single Bounce Clear Sight principle (SBCS) and equipped with Miro Silver mirrors and an Alpha Optics reflector, the 630W is a complete ceramic metal halide fixture. According to the company, the unit operates at 98-percent efficiency.

GLOBALGARDEN.CO

### AIR-POT

Now in its sixth generation, Air-Pot's design has been enhanced to maximize aeration, thereby helping plants develop healthy root systems. Additional oxygen in growing mediums increases healthy bacteria, which assist the plant in nutrient uptake. The product's wall shape discourages root circling.

AIR-POT.US





A man with short brown hair and a beard, wearing a black t-shirt, is smiling and making a peace sign with his right hand. He is standing in a lush green cannabis field with large leaves visible in the background.

**SOME REVOLUTIONS ARE BORN,  
OURS WAS ENGINEERED.**

*Kyle Castanon - Palomar Craft Cannabis*



#### **THE SORTER**

U.S. made. Precision-tooled. Sorting your flower for pre-trimming consistency and post-trimming packaging has never been easier. A whisper quiet motor, gentle transfer bands, and easy clean up make it clear: this is the sorting solution growers can depend on.

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## PRODUCTS



## PSYCHOACTIVE

### VIOLA VAPE PENS

Founded by former NBA star forward Al Harrington and named for his grandmother, Viola employs proprietary mixes and ratios to produce Viola's distillate and live resin cartridges. The signature purple products come in a variety of flavors and profiles. Available in Colorado, Oregon, Michigan, and California. VIOLABRANDS.COM

### CHAKRAS VAPE CARTRIDGES

In Ayurvedic philosophy, chakras connect the physical body to mental and spiritual energy. Chakras-the-company developed its cartridges with the goal of creating a total body experience that helps to align mind, body, and spirit. Each of seven flavors aligns with a specific chakra. Available in California. CHAKRAS.LIFE

### TINLEY '27 COLLECTION

Alcohol extracts impart flavor to these non-alcoholic beverages, which contain 10mg THC per serving. Combined with standard mixers, they create potent potables. Authentic flavors include coconut rum, amaretto, and cinnamon whisky. Single-serving lime margarita blend incorporates the sativa strain Pineapple Jack. Available in California. TINLEYCOLLECTIVE.COM

### DARWIN VOYAGER SERIES

The base ingredient for all Darwin products is triple-distilled, CO<sub>2</sub>-extracted cannabis oil distillate. One of three series Darwin produces,

Voyager is formulated for those who seek a powerful experience: Cartridges contain 1,000mg THC; gummies and hard candies 50mg per dose. Available in Arizona. DARWINBRANDS.COM

### CANNACUBES

Microdosing is easy with CannaCubes. Evergreen Organix's hard-candy lozenges are small, discreet, and 100-percent sugar-free. Flavors include cherry, mango, watermelon, blue raspberry, grape, and mint. Dosed at 5mg THC per lozenge; 100mg per pack. Available in Nevada. EVERGREENORGANIX.COM







## NON-PSYCHOACTIVE

### SISTERS OF THE VALLEY TOPICAL CBD SALVE

The Sisters make all their products in a spiritual environment and pour prayers for the people into every bottle and jar. This topical salve combines CBD-rich hemp oil with beeswax and coconut, vitamin E, calendula, and lavender oils. [SISTERSOFCBD.COM](http://SISTERSOFCBD.COM)

### ROOT ORIGINS DAY AND NIGHT SUBLINGUAL SPRAYS

Day formula is CBD-only, non-psychoactive, and available in peppermint flavor. Night formula combines melatonin, GABA, and valerian root to support better sleep. Each spray dose contains 1mg of CBD. All-natural ingredients, non-GMO, and gluten-free; made in the U.S.A. [ROOTORIGINS.COM](http://ROOTORIGINS.COM)

### THE CLEAR CBD VAPE PENS

Known for its THC extracts, The Clear now offers a line of CBD vapes that are available in almost all U.S. states. The classic system comprises a 220mg oil cartridge with an all-glass tank and a ceramic mouthpiece plus a C-Cell battery. Six fruit flavors. [THECLEARCBD.COM](http://THECLEARCBD.COM)

### TERPY J'S CBD HEMP PRE-ROLLS

Dipped in CBD distillate, each Terpy J's one-gram hemp pre-roll is enhanced with terpenes to produce original hemp, Blue Dream, Orange Cookies, or Sour Diesel flavors. Made from high-quality hemp grown in the U.S.A.; 10 percent of net profits are donated to FarmAid. [TERPYJS.COM](http://TERPYJS.COM)

### REVIVE HEMP OIL SPORTS RECOVERY SHOT

Each Sunderstorm Recovery shot delivers 12mg of liposomal CBD in 30-nanometer- to 100-nanometer-sized particles that are essentially too small to break down in stomach enzymes, thereby maximizing absorption. According to the company, nano-sized CBD liposomes coated with phospholipids are quickly absorbed by cells, promoting rapid recovery. [SUNDERSTORM.COM](http://SUNDERSTORM.COM)



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[ResponsiTech.com](https://ResponsiTech.com)

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# BEC KOOP AND MADLYNE KELLY

*The co-owners of Irie Weddings & Events recommend...*



## Vape

We absolutely love **LucidMood** ([LucidMood.net](http://LucidMood.net)) sippers. Ten amazing “moods” help make sure the atmosphere at an event is perfect. We also love the **Olio** ([DabOlio.com](http://DabOlio.com)) sauce pen, because Olio makes incredible-tasting concentrates loaded with delicious terpenes that easily can be paired with any dish.

## Edibles

We always recommend edibles that allow our clients to enjoy micro-servings rather than larger portion sizes at weddings or events. For this reason, we typically suggest our clients purchase a variety of candies from **Canyon Cultivation** ([CanyonTHC.com](http://CanyonTHC.com)) or the classic Buttermelt (butter mint) candies from **Sweet Grass Kitchen** ([SweetGrassKitchen.com](http://SweetGrassKitchen.com)). But if we need a boost of energy, we will pop a few chocolate-covered coffee GO Beans from **1906** ([1906NewHighs.com](http://1906NewHighs.com)).

## Water-soluble

With canna-cocktails becoming such a hot trend, we also are in love with products that easily can be mixed into mocktails in micro-servings. **Stillwater** ([Stillwater.life](http://Stillwater.life)) makes an incredible odorless, colorless, and tasteless 1:1 distillate powder that is a perfect addition to any drink. If you're looking for a little added flavor, we suggest Zootdrops or Zootblast from **Zoots** ([Zootology.com](http://Zootology.com)).

## Attire

**High Vibe Bride** ([HighVibeBride.com](http://HighVibeBride.com)) creates stunning hemp-silk, eco-friendly wedding dresses. For a little extra glam, **Smokies Toke Couture** ([SmokiesTokeCouture.myshopify.com](http://SmokiesTokeCouture.myshopify.com)) has some of the cutest cannabis-inspired jewelry that is also very affordable. For the fellas, we recommend cannabis leaf cufflinks and lapel pins from **Winky & Dutch** ([ShopWinky.com](http://ShopWinky.com)).

## Gifts

Who doesn't like getting a gift or a party favor? We always suggest an amazing lockable stash bag from **Stashlogix** ([Stashlogix.com](http://Stashlogix.com)) for responsible stoner friends. Another fun option is thank-you cards and escort cards from **Kush Kards** ([KushKards.com](http://KushKards.com)), which allow givers to attach a one-hitter or pre-roll. Looking for something more baller? Gift the maid of honor or best man a **PAX** ([paxvapor.com](http://paxvapor.com)) vaporizer.

## CBD

It's essential for us to have CBD on-hand at every event in case someone over-consumes THC. For this reason, we specifically carry hemp oil tinctures and vaporizer cartridges from **Intrepid Botanicals** ([IntrepidBotanicals.com](http://IntrepidBotanicals.com)) for fast-acting relief from anxiety and physical discomfort. We also never complain when our bud bar is set up next to **SteepFuze** ([SteepFuze.com](http://SteepFuze.com)), which offers CBD coffee and tea.

## Topical

**Verra Wellness** ([VerraWellness.com](http://VerraWellness.com)) makes a heavenly salve that takes away stress and aches. We cannot get enough of **Whoopi & Maya's** ([WhoopiAndMaya.com](http://WhoopiAndMaya.com)) Soak at the end of a long day when we just want a warm bath along with a good buzz.

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*BEC KOOP AND MADLYNE KELLY are co-owners of Irie Weddings & Events. Koop grew up in her mother's flower shop and transitioned into the cannabis industry by working at a dispensary before becoming an event planner. Kelly previously worked in state government. She is well-versed in regulatory issues and helps weddings and events with compliance. [IrieWeddingsAndEvents.com](http://IrieWeddingsAndEvents.com)*

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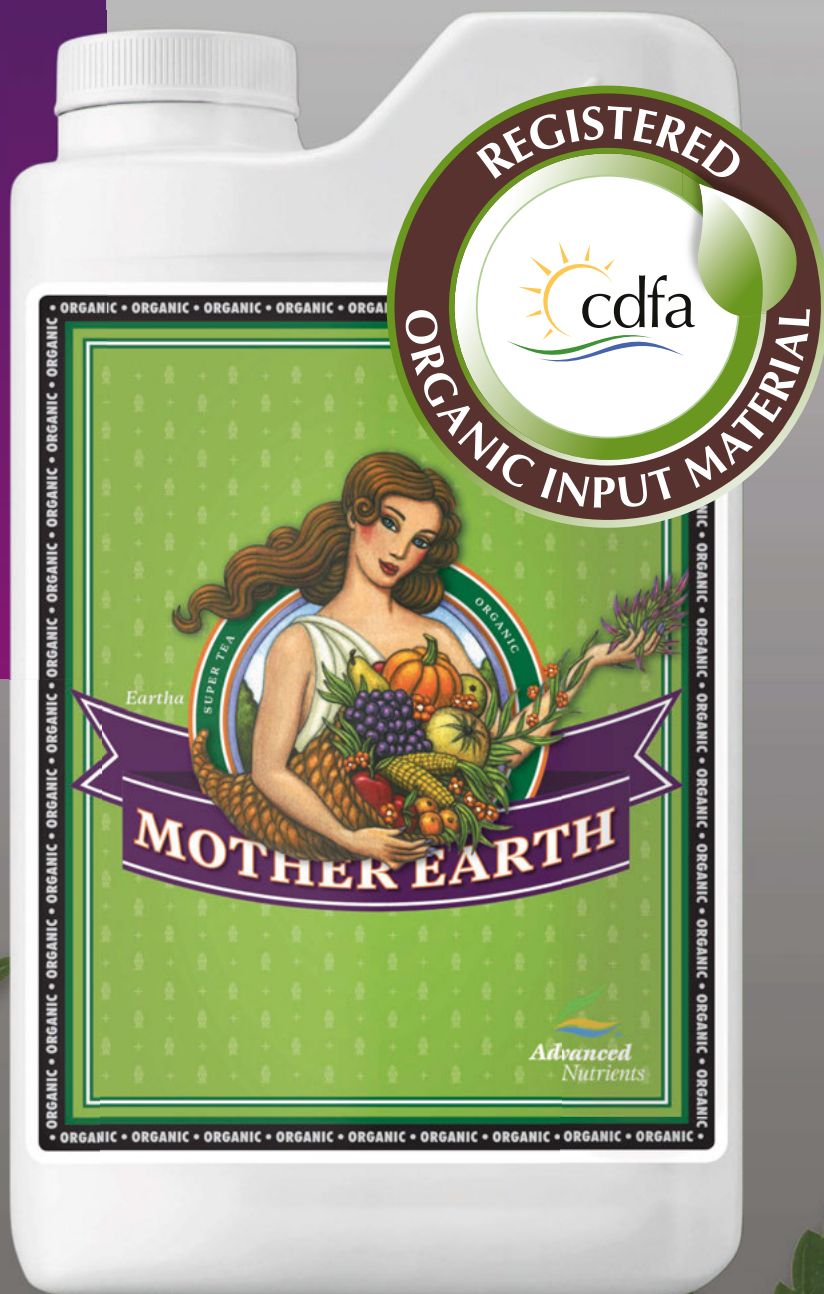


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