

March | 2018

www.mgretailer.com

PEOPLE + PLANTS + PRODUCTS

mg

For The Cannabis
PROFESSIONAL



\$7.95 U.S. | \$9.95 CANADA MAR 2018



MEET THE ALL-NEW HIGHLIGHTER

Redesigned with your feedback in mind



Your cannabis should be safe, effective and great-tasting. Our upgraded hardware and clean, all-natural oils deliver a reliably superior experience—every time.

Learn more at getbloomfarms.com or text us at (774) 462-5666



BLOOM FARMS™

SIZE MATTERS



**Measurable, significant increases
in overall harvest weight, taste,
and market value.**

AdvancedNutrients.com



***Advanced
Nutrients***

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



34

FEATURE: ONE STANDARD, INDIVISIBLE

The lack of a universal standard for cannabis testing is hampering labs' efforts to ensure safe, consistent products.

48

COVER STORY: LAB MAGIC

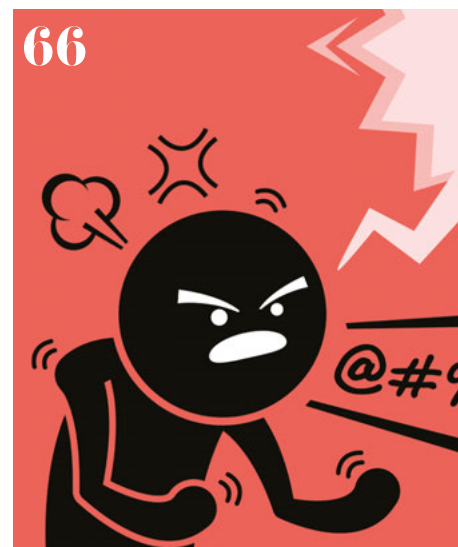
We visit two leading cannabis testing labs to see how they're preparing for California's new regulated economy.



Order@Kushypunch.com | www.kushypunch.com | 855-984-1771

JUST EAT IT





10 | HARVEST

News and information from around the nation.

21 | EXPOSURE

26 | MARKETPLACE INTELLIGENCE

A graphic look at margins, growth trends, and monthly sales.

28 | SPOTLIGHT: TOPICALS

For Thea Wayne of Humble Flower Co., forming relationships is the most important part of running a business.

30 | SPOTLIGHT: TRANSPORT

Ontario, California-based Quality Coachworks builds customized transport vehicles for the cannabis industry.

44 | CORNER OFFICE

N2 Packaging CEO Scott Martin on the company's revolutionary liquid nitrogen can, and why cultivators can't live without it.

62 | LEGAL

A look at "labor peace agreements" and why they may not bring employers much peace.

64 | TOP SHELF

Las Vegas's Nuwu Cannabis Marketplace may be the largest cannabis retail space in the world.

66 | TIP JAR

Empathy and problem-solving sometimes are all it takes to convert an upset patient into a customer for life.

68 | IN THE WEEDS

Chris Schulman on why business is booming at Grass Roots, the first San Francisco dispensary to go adult-use.

74 | PRODUCTS

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

82 | HASHTAG

84 | OPINION

Brittney Peloquin, marketing manager for Phillips & King International Inc., recommends...





**VAPE
YOUR
STRESS
AWAY**



**Mood enhancer
Anti-psychotic**

KUSHYPUNCH.COM
ORDER@KUSHYPUNCH.COM

855-984-1771
IG official_kushypunch_



LABORATORIES OF DEMOCRACY

HELPING REDEFINE THE WAY WE HEAL OURSELVES, helping reinforce the Tenth Amendment to the United States Constitution, and assisting in the creation of a new, multi-billion-dollar industry are just a few of the benefits cannabis labs potentially can achieve directly or in partnership with other institutions as the laws against cannabis and the stigma associated with it fall away and the money flows in. As important, but not nearly as monumental, is providing regulatory safeguards designed to keep pesticides and other substances from poisoning cannabis consumers.

The early labs arose in the gray market. They are the original services that offered testing to cannabis producers and manufacturers mostly to determine product potency for marketing purposes. Standards were self-imposed, without any oversight by the state, leading to rampant lab-shopping, a sad and dangerous situation for cannabis consumers. But labs also gathered terabytes of data and a foundation of knowledge and experience not taught in universities. Strapped for resources, they were frontiersmen in cannabis exploration.

Now a new age dawns, and the only obstacle to achieving the above goals is the same fear-driven ignorance that has dogged evolution since the beginning of time. Standing against it is the truth of the plant, which thus far has spoken powerfully through anecdotal testimony from untold thousands of people. Going forward, the truth will be spoken effusively and effectively in the language of the lab.

Tom Hymes
Tom@cannmg.com

OUR DO NO HARM MANTRA IS THE CORE OF OUR BUSINESS VALUES.

WE ALL SHARE THE COMMON GOAL OF WORKING SMARTER TO REDUCE OUR CARBON FOOTPRINT WITH SUPPLIERS, CUSTOMERS AND EMPLOYEES DRAMATICALLY REDUCING WASTE TO LANDFILL, SIGNIFICANTLY CUTTING PAPER AND MATERIAL USAGE COMPLYING WITH ENVIRONMENTAL STANDARDS AND PROGRAMS THAT HELPS US ACHIEVE THIS MISSION.

WE ONLY USE RECYCLED PAPERS AND SOY BASED INKS ON OUR PRINTED PRODUCTS WHENEVER POSSIBLE.



CORRECTIONS: In the February spotlight "Sweet Delivery," KIVA Sales & Service Head of Sales Charlie Cangialosi's name was misspelled. We apologize for this error.

mg is printed in the USA and all rights are reserved. ©2018 by CANN Media Group, LLC. **mg** considers its sources reliable and verifies as much data as possible, although reporting inaccuracies can occur; consequently, readers using this information do so at their own risk. Each business opportunity and/or investment inherently contains criteria understanding that the publisher is not rendering legal or financial advice. Neither CANN Media Group, LLC, nor their employees accept any responsibility whatsoever for their activities. All letters sent to **mg** magazine will be treated as unconditionally assigned for publication, copyright purposes and use in any publication or brochure and are subject to **mg** unrestricted right to edit and comment.

mg

For the Cannabis Professional

EDITOR IN CHIEF: **Tom Hymes**
EXECUTIVE EDITOR: **Rob Hill**
CREATIVE DIRECTOR: **Angela Derasmo**
CONTACT: Editorial@cannmg.com

CONTRIBUTING EDITORS

Adrian Sedlin, Alec Rochford, Dr. Allen S. Miller, Ashley Picillo, Bailey Bifoss, Benjamin Hoopes, Brittny Peloquin, Cameron Martel, Christopher Conti, Danny Davis, Danny Reed, David Hodes, Danielle Moore, Dr. Donald Land, Jefferson Reid, John Rozelle, Kate Cook, Kenneth J. Berke, Kymron Decesare, Leah Maurer, Leslie Bocskor, Lukian Kobzeff, Joanne Cachapero, Matthew Rosen, Megan Stone, Michael Chernis Esq., Nancy Gudekunst, Nancy A. Shenker, Neil Juneja, Nigel Williams, Paul Kiernan, Robert T. Hoban Esq., Sahar Ayinehsazian, Sam Fensterstock

ADVERTISING & MARKETING

SALES DEPARTMENT:

Brie Ann Gould: Brie@cannmg.com
Meghan Cashel: Meghan@cannmg.com
General Inquiries: Sales@cannmg.com

PHOTOGRAPHY

COVER PHOTO: Compsite

CONTRIBUTING PHOTOGRAPHERS: Kristen Angelo, Jeff Forney, Thomas O'Brien, Mike Rosati, Simeon Schatz, Jamie Soja, Michael Snyder, Lukas Zanolli

CONTRIBUTING ARTISTS

Ryan Caradang, Christine Pervarnik, Zack Korn

DATA MANAGEMENT

DATA MANAGER: Sonia Erazo

ONLINE DEPARTMENT

BRAND MANAGER: Ryan Caradang
WEB DEVELOPMENT: Chris Fulton
SOCIAL MEDIA MANAGER: Danny Reed
VIDEO DEPARTMENT: Eric Mittleman, TJ Roberts

BUSINESS OFFICES

CHIEF EXECUTIVE OFFICER: Darren B. Roberts
DIRECTOR OF CONTENT : Kathee Brewer
DIRECTOR OF OPERATIONS: Erin Zavala
CREATIVE STRATEGIST: Gavin Antill
EXECUTIVE ASSISTANT: Jenny Voronina
GENERAL INFORMATION: [Hello@cannmg.com](mailto>Hello@cannmg.com)

MAILING ADDRESS

CANN Media Group, LLC
21333 Oxnard Street, Second Floor
Woodland Hills, CA 91367
(310) 421-1860

cann } mg

www.mgretailer.com

A CANN Media Group Publication

mg: For The Cannabis Professional Vol. 4, No. 3, (ISSN 2379-1659) is published monthly and is available to qualified industry professionals by readership request or is also available for purchase online [subscribe.mgretailer.com]. Application to mail at Periodicals Pending postage rate is pending at Canoga Park, CA, and at additional mailing offices. **POSTMASTER:** Send all UAA to CFS. **NON-POSTAL AND MILITARY FACILITIES:** send address corrections to: **mg: For The Cannabis Professional**, 21333 Oxnard Street, Woodland Hills, CA 91367.

KANDYPENS

RUBI



AWARDED "BEST OIL VAPORIZER OF 2017" BY THE GUIDE VAPE



- OCELL Ceramic Coil Technology
- Super Compact (Only 4 inches tall)
- Refillable 1ML Capacity Pod
- Air Activated (No power button)
- Leak-Proof Pod Design

AVAILABLE AT

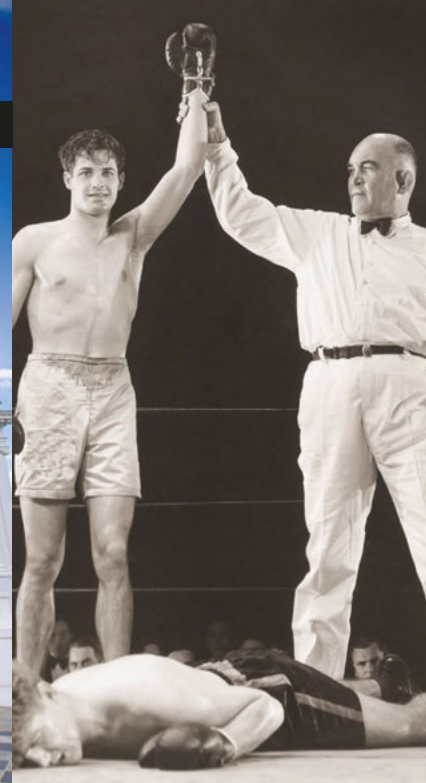


WWW.VAPORNATION.COM

888-321-VAPOR (8276) • WHOLESALE@VAPORNATION.COM



VIRGINIA LIKELY TO EXPAND MEDICAL MARIJUANA



NCIA PRESENTS SEVEN INDUSTRY
EXCELLENCE AWARDS

ALCOHOL DAMAGES BRAIN
MORE THAN CANNABIS

HARVEST

All the news that's fit to smoke.



SAN FRANCISCO TO WIPE AWAY THOUSANDS OF MARIJUANA CONVICTIONS

TREASURY SECRETARY INCHES TOWARD SUPPORT FOR CANNABIS BANKING



WASHINGTON, D.C. — Treasury Secretary Steven Mnuchin wants to “find a solution” to public safety and tax collection issues arising from the cannabis industry’s inability to access reliable banking services. In testimony before the House Financial Services Committee February 6, Mnuchin stopped short of expressing support for the current official guidance to banks or pending House legislation that would create legislative protections for banks working with legal businesses in the burgeoning multi-billion-dollar industry.

“I assure you we don’t want bags of cash [sitting in dispensaries],” Mnuchin testified during his three-hour-plus appearance. But, “we want to make sure we can collect our necessary taxes and other things.”

The bank guidance, issued in 2014 by Treasury’s Financial Crimes Enforcement Network (FinCEN), established rules allowing “banks to open accounts for marijuana growers, processors, and retailers without running afoul of federal regulators,” reported *Forbes.com*. “But last month, U.S. Attorney General Jeff Sessions rescinded a broader policy from the former administration that has generally cleared the way for states to implement their own cannabis laws without Justice Department interference. That move has led to fears that the Trump administration may tear up the banking memo, as well.”

Mnuchin did little to put that fear to rest, stating the guidance currently is under review by the department, but he at least attempted to calm concerns the industry would be left totally adrift without any guidance. “The intent is not to take it down without a replacement that can deal with the current situation,” he said.



DENNIS PERON, ‘FATHER OF MEDICAL CANNABIS,’ DIES

SAN FRANCISCO — Dennis Peron, a primary driver behind the medical marijuana legalization movement in California, died of lung cancer January 27 at the Veteran’s Administration Health Center. He was 72.

Known for writing and promoting Proposition 215, the ballot initiative that legalized medical cannabis in what is now the country’s largest market, Peron also was a vigorous advocate of cannabis’s benefits for AIDS patients in the 1980s. His partner, Jonathan West, died of AIDS in 1990. In 1991, Peron organized and helped pass San Francisco’s Proposition P, an initiative that legalized medical marijuana in the city. Thereafter, he threw his efforts into Prop. 215, which passed in 1996.

In 2017, the San Francisco Board of Supervisors issued a certificate of honor to Peron. Supervisor Jeff Sheehy referred to him as “the father of medical cannabis.”

In Oregon

infused coffee made up

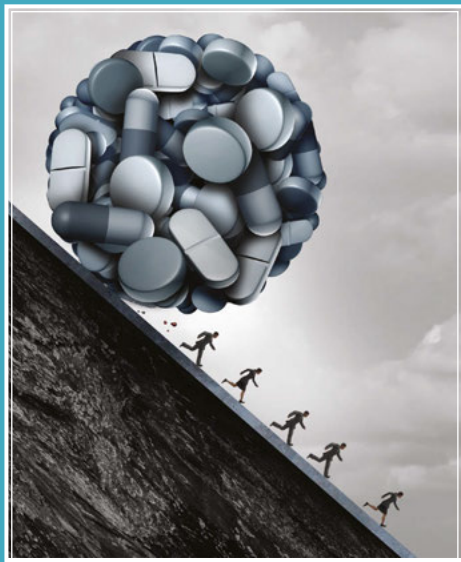
22%

of infused beverage sales;
tea accounted for

10%

during 2017.





JEFF SESSIONS BLAMES CANNABIS FOR CONTRIBUTING TO OPIOID CRISIS

WASHINGTON, D.C. — In a February speech to the conservative Reagan Alumni Association, U.S. Attorney General Jeff Sessions suggested marijuana is a “gateway drug” fueling the opioid crisis.

“The [Drug Enforcement Administration] said that a huge percentage of heroin addiction starts with prescriptions,” Session told the group. “That may be an exaggerated number; they had it as high as 80 percent. We think a lot of this is starting with marijuana and other drugs, too.”

Sessions may want to consider embracing marijuana. According to a survey conducted by the Brightfield Group and HelloMD, 42 percent of CBD users have replaced their over-the-counter or prescription painkillers with cannabis products. Overall, 80 percent of survey respondents found cannabis to be “very” or “extremely” effective at reducing pain.

U.S. ATTORNEY: ‘MASSIVE’ OVERPRODUCTION FEEDING BLACK MARKET

PORTLAND, Ore. — Oregon growers are producing three times more cannabis than can be consumed, and the “massive” overproduction has been a boon for the black market, according to U.S. Attorney Billy Williams. In February, he told a summit of federal law-enforcement representatives, state officials, and members of the cannabis industry he intends to “do something” about the situation immediately.

“Here’s what I know in terms of the landscape here in Oregon, and that is we have an identifiable and formidable marijuana overproduction and diversion problem,” he told the group.

In an op-ed published by Oregon Live in January, Williams noted law enforcement in sixteen other states reported confiscating cannabis from Oregon in 2017. Postal agents in Oregon reported 2,644 pounds of cannabis were seized in outgoing packages last year.

“This lucrative supply attracts cartels and other criminal networks into Oregon and in turn brings money laundering, violence, and environmental degradation,” he wrote.

Oregon Governor Kate Brown said she does not feel Williams’s eagerness to address overproduction will result in a mass crackdown or disruption of the industry.

65%

of cannabis investors made their first investment in 2014 or later.

(Source: Arcview)

18%

of Canadian adults used medical cannabis during 2017.

(Source: Statista)

37%

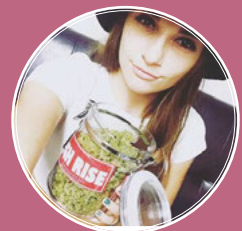
Washington state sales tax on adult-use product

(Source: Washington State liquor and Cannabis Board)

SOCIALLY ENGAGED



@muh_riah
35K



@2girls.1bong
74K



@imcannabess
83K



MEET OUR MENDO.

KOROVA
UNRIVALED.



FEW HAVE ACCESS TO TEXAS'S FIRST DISPENSARIES

MANCHACA, Texas — Texas's first medical cannabis dispensary commenced customer-facing operations in late January, but many patients still may not be able to get the medicine they need.

Texas law restricts medical cannabis to patients suffering intractable epilepsy, and then only with a prescription from *two* of the eighteen physicians statewide who are licensed to prescribe the approved CBD oil. In addition, doctors may write prescriptions only after certifying treatment with two FDA-approved epilepsy medications has failed.

Roughly 160,000 Texans suffer from intractable epilepsy. That's less than 1 percent of the state's population, but those potential cannabis patients are spread out across a land mass of 269,000 square miles. Much of the state remains rural, and most of the prescribing physicians practice in big cities.

And then there's the matter of the paltry number of dispensaries: a total of three.

Nevertheless, "for Texans suffering from intractable epilepsy, the wait for medical cannabis is finally over," Knox Medical founder and Chief Executive Officer José Hidalgo told the *Texas Tribune*. Knox is one of the dispensaries. "This is a historic day for Texas."



LEGAL MARIJUANA OUTSELLS LIQUOR IN COLORADO RESORT TOWN

ASPEN, Colo. — In 2017 Cannabis retailers outsold liquor stores in Aspen, Colorado, for the first time since legal adult-use sales began in 2014.

According to the resort city's Department of Finance, the city's six dispensaries took in \$11.3 million in revenue. Combined, five liquor stores took in \$10.5 million. Dispensary sales growth, at 16 percent, outpaced growth in all other sectors. In 2015, the first full year of adult-use sales, Aspen shops sold \$8.3 million worth of marijuana products. The figure rose to \$9.7 million in 2016.

"I think people are looking for something different from alcohol, which is essentially poison, and marijuana is botanical," Matt Kind, a Boulder entrepreneur and host of the CannaInsider podcast told the *Aspen Times*.

Liquor stores remained more popular than dispensaries during the holiday season, earning \$1.6 million vs. \$1.2 million for cannabis shops.



REC USE PROPOSED IN GEORGIA

ATLANTA — Georgia State Senator Curt Thompson, a Democrat, has authored a bill to legalize recreational possession of up to two ounces of flower. He also wants to broaden the state's limited medical market. Why? Tax revenue.

"If you used the Colorado tax rates and then [corrected] for population...you end up bringing about \$340 million dollars a year just in tax revenue," Thompson told WSB-TV in Atlanta. "The historical trends and the political trends nationally, and even here in Georgia, are on our side."



TASTE OUR THC BOMB.

KOROVA
UNRIVALED.

THE STATE OF CONNECTICUT CANNABIS

Medical-only market with...

23,614
registered patients.

826
registered physicians.

9
dispensaries.

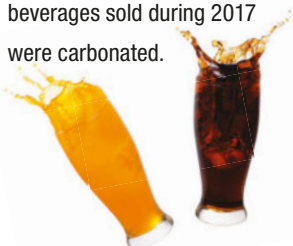
4
producers.

(Source: Connecticut Department of Consumer Protection)

IN WASHINGTON,

77%

percent of cannabis-infused
beverages sold during 2017
were carbonated.



**Non-
carbonated**

drinks made up

60%

of infused beverages sales in
Colorado and 54 percent in
California.

(Source: BDS Analytics)

AMAZING EDIBLES

*During the period January 1 through October 31, 2017,
sales of cannabis edibles in Colorado, Washington,
Oregon, and California broke down thusly:*

Candy 40%
\$116
million

Chocolates 22%
\$119
million

Tinctures 13%
\$69
million

Infused foods 11%
\$116
million

Pills 7%
\$37
million

Beverages 6%
\$30
million

Other 1%
\$12
million



(Source: BDS Analytics)

GB SCIENCES FILES ANTI-INFLAMMATORY PATENT APPLICATION

LAS VEGAS — GB Sciences Inc. has filed a nonprovisional patent application to protect its cannabinoid-containing complex mixtures for treating inflammatory disorders including arthritis, asthma, eczema, psoriasis, Crohn's disease, and inflammatory bowel disease.

As a category, inflammatory diseases represent a serious health burden in the US with over \$200 billion spent annually. New cannabis-based therapies could significantly help both patients and society, according to Chief Science Officer Dr. Andrea Small Howard.

GBSCIENCES.COM

\$140
billion

projected global legal cannabis
market size by 2027.

(Source: Garnier & Co)



CONFER WITH OUR COOKIES.

KOROVA
UNRIVALED.



BLOOM FARMS DONATES 1 MILLION HEALTHY MEALS

OAKLAND, Calif. — Bloom Farms in January reached its goal of donating one million meals to food-insecure families and individuals. The milestone was cause for a double celebration: Because of the company's one-for-one vow, the one millionth meal donation signified Bloom Farms also had sold one million products.

"From the start, we wanted to build a business that contributed to the communities we live and work in on many levels," said Chief Executive Officer Michael Ray. "Donating our one-millionth meal shows we're succeeding for our customers, who have purchased one million of our products and appreciate that we are working toward the greater good, and for California's most vulnerable families who have received the gift of nutritious food."

BLOOMFARMS.COM

NEXT FRONTIER BIOSCIENCES ASSEMBLES RESEARCH TEAM

DENVER — Biotech company Next Frontier Biosciences has assembled a new research-and-development team as part of a bid to expand its lines of medical and adult-use products into emerging domestic and international markets. The company plans to introduce at least two new products during 2018.

"Our research-and-development team plays an integral role in creating new products and supporting our expansion strategy, including developing robust manufacturing processes, product specifications, and standard operating procedures," said co-founder and Chief Executive Officer Marc Graboyes. "Their work allows us to pursue valuable intellectual property rights and implement a broad-based licensing program wherein our proprietary formulations and brands are made available to third parties who possess the licenses and facilities required to manufacture, sell, and distribute our cannabis products in their respective markets."

The R&D team's members include co-founder and Chief Scientific Officer Paul Johnson, Ph.D.; Vice President of Product Development Dorothy "Dot" Colagiovanni, Ph.D.; Director of Formulation Sciences Stephen Cape, Ph.D.; Director of Analytical Chemistry Kris Chupka; senior analytical chemist Susan Schwarz; and new hire Andres Gandara, a formulation scientist.

NEXTFRONTIERBIO.COM



4

PLANTS:

Household cultivation limit in Canada.
(Source: Health Canada)



KOROVA
UNRIVALED.

NUGGETS



1 SWISSX LABS has reformulated its CBD oil products, which now include a broader range of terpenes with 0.01% THC.

SWISSX.COM



2 CANNAROYALTY expanded its Bhang-brand vaporizer footprint in California through the River Distribution Network.

CANNAROYALTY.COM



3 GROWN ROGUE introduced one of the first nitrogen-sealed pre-rolls, using a vacuum process to prevent oxidation.

GROWNROGUE.COM



4 CANNDESCENT closed a \$10m Series B round to finance a tenfold production increase and launch new products.

CANNDESCENT.COM

AURORA CANNABIS ACQUIRES CANNIMED THERAPEUTICS

CREMONA, Alberta — Aurora Cannabis Inc., formerly Canada's second-largest producer of medical cannabis products, purchased smaller rival CanniMed Therapeutics Inc. in late January for C\$1.1 billion (about U.S. \$852 million). The largest Canadian deal to date gives Aurora a market value of C\$7.4 billion, overtaking Canopy Growth Corp.'s C\$6.7 billion market valuation.

According to Thompson Reuters, 2018 is shaping up to be a boom year for mergers between Canadian cannabis entities. Deals valued at C\$1.2 billion had taken place by the end of the year's first month, more than doubling 2017's year-end total.

Prior to the merger, Aurora shares rose 395 percent during the fourth quarter of 2017, and CanniMed's rose 257 percent.

Need a CO₂ extraction system quickly?

If we don't have Introductory or Mid-Range systems in stock, we can get them **manufactured in four weeks!** Call us today to learn more.

TERPENES AND TESTING WORLD CONFERENCE 2018

See us at Booth #117

3 YEAR WARRANTY

(740) 809-1160

sales@apekssupercritical.com

www.apekssupercritical.com

apeks[®] SUPERCritical

The Power of CO₂ Extraction[®]

JONATHAN VALDMAN

An entrepreneur, educator, and the founder of Forever Flowering in California, Valdman has been growing organically for more than twenty years and is a second-generation cannabis farmer.

 Jeff Forney





GROWFLUX INTRODUCES 'INTELLIGENT' PAR SOLUTION

PHILADELPHIA — Growflux Inc. has launched the FluxScale platform, which the company describes as an “intelligent horticulture LED lighting solution incorporating automated light management.”

FluxScale provides a photosynthetic active radiation (PAR) system that automatically manages the PAR output of lighting fixtures over time, ensuring consistent results for large-scale grow facilities. The system also is the first horticultural lighting solution that emits vegetative blue-rich broad-spectrum PAR and flowering red-rich broad-spectrum PAR at full power in one fixture, allowing

growers to cultivate throughout all stages of plant growth without moving plants or installing multiple fixtures.

FluxScale emits tunable light from every portion of the PAR spectrum promoting development of all plant functions including complex pigment systems. The technology allows cultivators to pinpoint the optimal light spectrum for each crop and can be tuned for desirable outcomes such as specific flavors, accelerated flowering, and specific shapes of plants.

GROWFLUX.COM



TRUE LEAF LAUNCHES 'RETURN THE LOVE' CHARITABLE GIVING PROGRAM

VERNON, B.C. — Valentine's Day saw the debut of Return the Love, a charitable giving program founded by Canadian medicinal cannabis and hemp products manufacturer True Leaf Medicine International Ltd. Befitting a day devoted to love, the company chose as its first beneficiaries two organizations devoted to “love therapy” provided by man's best friend.

St. John Ambulance, a first aid training and community service organization, and the BC Pets and Friends therapy-dog program each will receive financial support for their work using pet therapy to ease feelings of loneliness and anxiety among seniors in nursing homes and hospices.

“We're inspired by our pets and their remarkable capacity for unconditional love,” said Darcy Bomford, founder and Chief Executive Officer for True Leaf, which manufactures the True Hemp pet supplement line in Canada, the United States, and Europe. “We're dedicated to returning that love to the community through our products and programs.”

Three thousand five hundred St. John Ambulance therapy dog-and-handler teams across Canada provide comfort to more than 120,000 Canadians every year. BC Pets and Friends, the oldest pet therapy organization in British Columbia, annually touches the lives of more than 15,000 people in more than 200 healthcare settings. TRUELEAF.COM



NEW TRADE SHOW TO CONNECT CANNABIS, BEVERAGES INDUSTRIES

SAN FRANCISCO — A new conference and exhibition designed to help the global beverages industry understand the challenges and potential opportunities arising from legalized cannabis in North America is expected to bow in July 2019.

The Cannabis Drinks Expo plans to examine topics including compliance with current and future legislation, distribution channels and routes to market, and adapting traditional business models to embrace emerging opportunities in the legal cannabis sector.

CANNABISDRINKSEXPO.COM



THE WORLD'S ONLY PROVIDER OF
TURN-KEY EXTRACTION LABS

PROFESSIONAL SITE PLANNING LAB DESIGN
ENGINEERING COMPLIANCE FIELD VERIFICATION
LICENSING INSTALLATION TRAINING WORKFLOW

SUCCESS
MADE WITH PRECISION[®]
#1 in Quality, Customer Service & Tech Support

Precision[®]
Extraction **solutions**

855-420-0020
PRECISIONEXTRACTION.COM

EQUIPMENT | TRAINING | COMPLIANCE | SUPPORT



**KING
WEEDY**
CANNABIS COLLECTIVE

WASHINGTON, DC

EDUCATION

COMMUNITY

PRIVATE EVENTS

CORPORATE
FUNCTIONS

SOUVENIR
T-SHIRTS
AVAILABLE
ONLINE



VISIT US WHEN
YOU ARE IN DC
OPEN DAILY

(202) 394-4493

www.kingweedy.com



APRIL 2018 EVENT SCHEDULE

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

RENO CANNABIS CONVENTION APRIL 7-8

WHITNEY PEAK HOTEL, RENO, NEVADA

The Reno Cannabis Convention serves both business-to-business and business-to-consumer segments as well as patients and caregivers in the state of Nevada. All facets of the cannabis industry will be represented at this event.

THERENOEXPO.COM

420 RALLY DENVER APRIL 20

CIVIC CENTER PARK, DENVER

The 420 Rally has been around for decades and is one of the oldest events for cannabis enthusiasts. The event is free to the public and will include vendor booths and musical performances including Lil' Wayne and Wiz Khalifa.

DENVER420RALLY.ORG

INSTITUTIONAL CAPITAL & CANNABIS CONFERENCE APRIL 9-10

JW MARRIOTT, LOS ANGELES

The third annual event will gather the industry's top experts to analyze the early stages of cannabis legalization in California and what those implications could mean for the industry at large.

IMN.ORG

INSTITUTE OF CANNABIS RESEARCH ANNUAL CONFERENCE APRIL 26-28

COLORADO STATE UNIVERSITY,
PUEBLO, COLORADO

The second annual conference will consist of a three-day forum where cannabis experts share knowledge about scientific, medical, industrial, legal, economic, and social elements of cannabis research.

CSUPUEBLO.EDU

2018 WORLD MEDICAL CANNABIS CONFERENCE & EXPO APRIL 12-14

DAVID L. LAWRENCE CONVENTION CENTER,
PITTSBURGH

Attendees can expect to interact with medical and recreational cannabis professionals, cultivators, dispensary operators, patients, job seekers, entrepreneurs, investors, healthcare providers and more.

COMPASSIONATECERTIFICATIONCENTERS.COM



STAY CURRENT ON ALL INDUSTRY EVENTS: MGRETAILER.COM

HOW DO YOU HANDLE ODOR CONTROL?



Odor Control Engineered Plans | Odor Control Neutralizers
Vapor and Water-based Odor Control Dispersion Systems
Odor Impact Air Model Studies | Nationwide Service Team

NCMenvironmentalsolutions.com



FLOWER SALES VS. PRICES ACROSS FOUR STATES

Provided by BDS Analytics

COLORADO

FROM JANUARY THROUGH OCTOBER 2017, JUST 49.5 PERCENT OF COLORADO'S SALES CAME FROM FLOWER. The category generated a greater proportion of sales in medical dispensaries, where flower contributed 54 percent of revenues, but in the larger adult-use channel, flower contributed less than 48 percent of sales and the trend showed no signs of slowing.

Since legal adult-use sales began in Colorado in 2014, flower prices have declined across both adult-use and medical channels. Lower prices sparked demand and overall the category has grown, even if its share of the market decreased. While prices continued to decline during 2017, the rate of decline slowed and the corresponding growth in sales volume nearly ceased.

In January 2017, the average retail price for a gram of flower at Colorado's adult-use dispensaries was \$6.65 (pre-tax) and the category generated \$39.85 million in sales. By October, the average retail price had declined 12 percent, and sales for the month were less than 1 percent

WASHINGTON

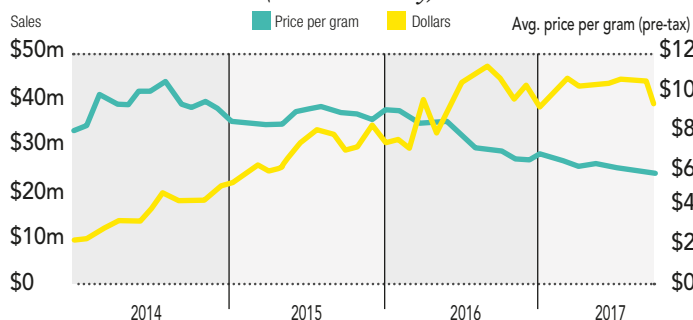
BETWEEN JULY 2014, WHEN RECREATIONAL SALES STARTED IN WASHINGTON STATE, AND OCTOBER 2017, DISPENSARIES SOLD 373,000 POUNDS OF FLOWER AND BUD, GENERATING \$1.1 BILLION. Flower sales steadily grew in Washington state as the continual decline of retail prices helped boost demand. Despite continued growth in the category, the overall contribution of sales from flower has declined as other categories outperformed flower sales.

The highs and lows of flower pricing in Washington state are among the most dramatic. Since July 2014, the average price for a gram of flower (pre-tax) has declined a whopping \$17.23, settling at \$5.18 a gram in October 2017—a 77-percent drop.

Not only are flower prices low, but retailers also tend to carry more varieties of flower than in other states. In October 2017, nearly 800 brands of flower were available at Washington dispensaries. Those brands offered more than 2,700 named strains; in total, dispensaries offered more than 12,500 unique flower-based SKUs.

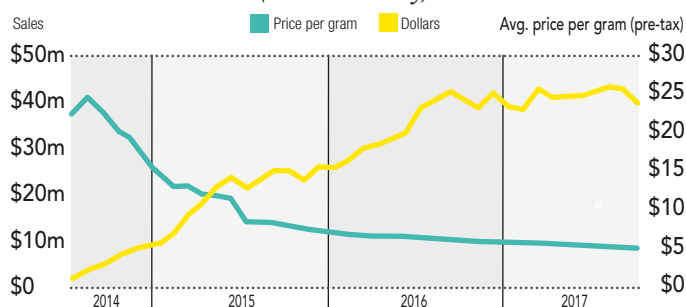
COLORADO FLOWER/BUD SALES VS. PRICE

(Adult-Use Only)



WASHINGTON FLOWER/ BUD SALES VS. PRICE

(Adult-Use Only)



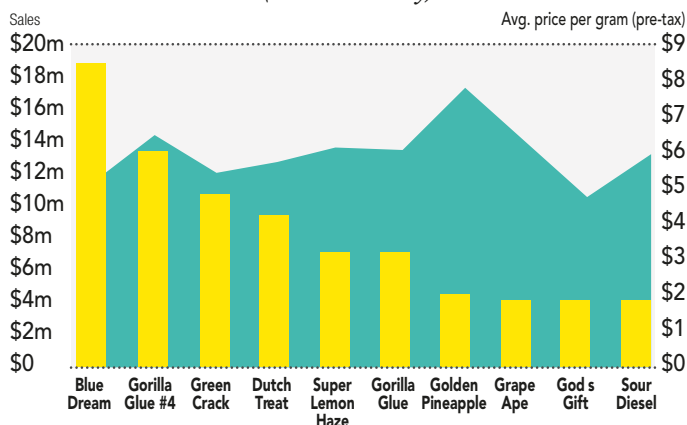
AVERAGE PRICE PER GRAM: COLORADO'S 10 TOP-SELLING STRAINS

(Adult-Use Only)



AVERAGE PRICE PER GRAM: WASHINGTON'S 10 TOP-SELLING STRAINS

(Adult-Use Only)



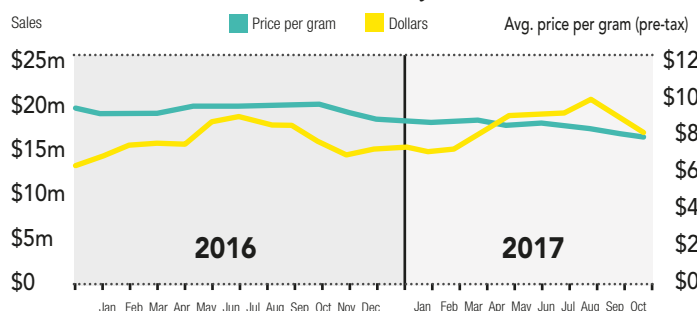
OREGON

FROM JANUARY 2015 THROUGH OCTOBER 2017, OREGON'S DISPENSARIES GENERATED SLIGHTLY MORE THAN \$1 BILLION IN SALES. Fifty-nine percent of the sales, or \$594 million, came directly from flower and bud. In 2017, flower's dominance slowly declined as the regulatory environment for cannabis stabilized in Oregon and other product categories enjoyed uninterrupted growth. While flower sales remain dominant, flower contributed just 51 percent of sales through October; growth in other categories including concentrates, edibles, and topicals all outpaced flower.

In October 2017, the average price for a gram of flower in Oregon's adult-use market was \$7.97 (pre-tax), 10 percent lower than in January 2017. Over the same period, monthly sales in the category grew 11 percent. Compared to October 2016, the price declined 19 percent, but monthly sales increased only 8 percent. Declines in pricing tend to drive sales growth in a market with strong demand, but the rate of decline in flower pricing in Oregon was not enough to drive significant increases in sales.

OREGON FLOWER/BUD SALES VS. PRICE

(Adult-Use Only)



CALIFORNIA

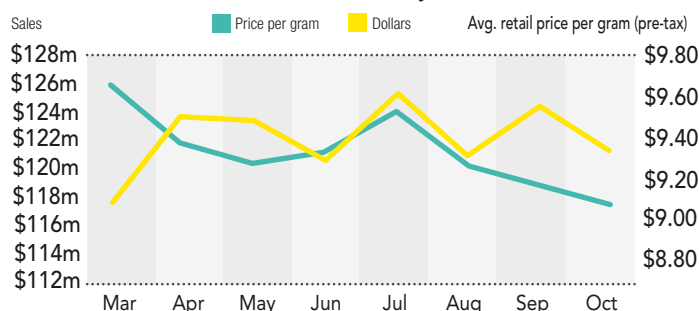
BETWEEN MARCH AND OCTOBER OF 2017, TOTAL SALES THROUGH DISPENSARY AND DELIVERY SERVICES ACROSS THE MOST POPULOUS STATE IN THE COUNTRY REACHED \$1.856 BILLION. Flower and bud contributed 53 percent of revenues in the state, with total sales for the category reaching \$989 million. This does not include flower going into pre-rolled joints, as those sales are tracked separately.

Between March and October, the proportion of sales coming from flower vs. other product categories shifted quickly, as more brands flooded the market in anticipation of recreational sales starting January 1, 2018. Like Colorado, California likely will see flower's contribution to total revenue dip below 50 percent in 2018.

In October 2017, the average retail price for a gram of flower in California dispensaries was \$9.09, 6 percent lower than the peak price of \$9.68 in March. Between March and May, prices declined before temporarily increasing in June and July. Heading into late summer and early fall, sales began a multi-month slide.

CALIFORNIA FLOWER/BUD SALE VS. PRICE

(Adult-Use Only)



AVERAGE PRICE PER GRAM: OREGON'S 10 TOP-SELLING STRAINS

(Adult-Use Only)

Purple Trainwreck	\$4.97
Lemon Kush	\$6.78
Purple Hindu Kush	\$6.99
Girl Scout Cookies	\$7.26
Quantum Kush	\$8.80
Blue Dream	\$8.99
Gorilla Glue #4	\$9.32
Platinum Girl Scout Cookies	\$9.85
Pineapple Express	\$10.02
Durban Poison	\$12.21

AVERAGE PRICE PER GRAM: CALIFORNIA'S 10 TOP-SELLING STRAINS

(Adult-Use Only)

OG Kush	\$7.86
Blue Dream	\$7.94
Sour Diesel	\$8.34
Green Crack	\$8.44
Granddaddy Purple	\$8.90
Girl Scout Cookies	\$9.57
Gorilla Glue #4	\$9.79
Jack Herer	\$10.26
Super Silver Haze	\$10.70
Kosher Kush	\$11.07

BDS ANALYTICS aggregates point-of-sale data from dispensaries and produces monthly reports detailing sales through dispensaries in Colorado, Oregon, and Washington. The information cited leverages BDS data to provide a snapshot of flower pricing trends. For more information about specific strains, brands, or any other product category sold in dispensaries, contact BDS Analytics at info@bdsanalytics.com.



MEETING EXPECTATIONS

For Humble Flower Co.'s Thea Wayne, business is all about relationships.

LIKE MOST CANNABIS ENTREPRENEURS, Thea Wayne arrived in the cannabis industry via an uncharted and serendipitous road. While growing up in Alaska, she developed a love for Mother Nature, but it wasn't until she attended Humboldt State University in Arcata, California, that she discovered the magic of cannabis. As she studied international relations, she worked part-time on a cannabis farm nestled among the wondrous redwoods of Humboldt County. After college, she traveled to Nepal for a business-and-marketing internship. There, everything changed.

"I worked with a group of female farmers in the mountains to help share their stories and raise money for them," Wayne explained. "It was a life-changing experience for multiple reasons. It was a beautiful and inspiring experience, but I also became very ill.

"I returned from my trip with an undiagnosed illness that I am still trying to find a solution for," she continued. "The mystery illness results in constant, chronic headaches. Thankfully, my salve and various high-CBD strains have been able to help ease the pain. I believe these health struggles inspired me to start Humble Flower Co., creating healing products to help people with chronic pain."

Wayne had invaluable skills for a rapidly evolving market. She briefly toyed with the idea of creating both edibles and topicals, but because she rarely smokes or consumes edibles, she felt the most affinity for a product she could use herself.

"My mom is a nurse [and] herbalist and has a great understanding of plants and essential oils," Wayne said. "I realized the two of us together could formulate some amazing products, so I spent about six months researching skin care brands, finding ones I admired for their

ethos and branding. I wanted to make sure my products were elegant and unique."

Wayne said Humble Flower Co. products differ from others in three primary ways. First, they contain minimal cannabis scent. HFC uses cannabis oil mixed with aromatic and anti-inflammatory essential oils. Second, because of the minimal cannabis scent and simple packaging, the products are discrete, which makes customers feel more comfortable purchasing them. Third, because the products are non-psychoactive, first-time cannabis customers aren't intimidated by the idea of trying something new.

Wayne insists HFC products have an elegant energy about them. She is adamant the products should look like skincare items at Whole Foods and high-end spas. "Humble Flower Co. is designed with the goal of altering the stoner stigma, making cannabis customers feel comfortable and safe with our products," she said.

"I made my first sale to a local dispensary here in Humboldt County one year ago," Wayne said. "Being self-funded up to this point, Humble Flower Co. has grown and scaled naturally over the past year. Our orders and sales tripled after six months of operation, confirming I was on the right path. Interest in our products has gone up dramatically, and I foresee massive growth over the next year as we expand into Southern California."

In order to grow the company and tend to her health, Wayne keeps an arduous daily schedule. Most of her energy goes into meetings and relationships, which are the core of her business. "I really enjoy using Instagram as a marketing and networking tool and have made many great friends and business associates through it," she said. But, she said, most of her energy goes to meetings and relationships, which are the core of her business.

"I did not realize the most important part of business ownership would be my relationships with distributors, customers, and dispensary buyers," she said. "My day is mostly filled with maintaining communication with all the moving pieces involved in managing a statewide cannabis brand." — Rob Hill

HUMBLEFLOWERCO.COM

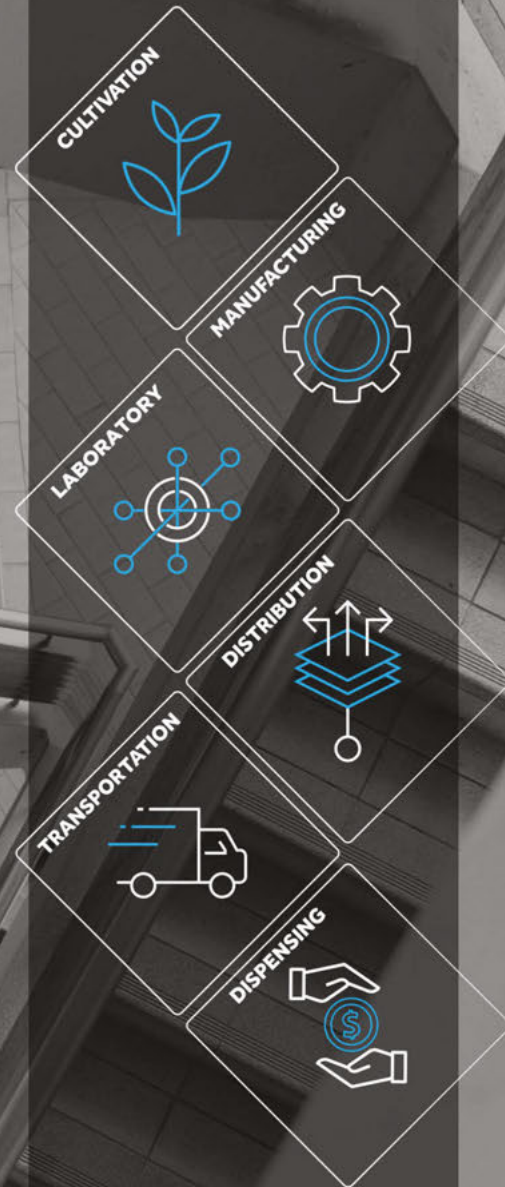
SIVA LOOKS AT YOUR BUSINESS FROM ALL ANGLES

WE STRUCTURE COMPANIES TO ENSURE
OPPORTUNITIES ARE MAXIMIZED AND
GREATER EFFICIENCIES ARE REALIZED

WE ARE INDUSTRY PIONEERS
WHO CARE AND HAVE THE
EXPERIENCE YOU CAN TRUST

SIVA[™]
ENTERPRISES

NATIONWIDE LICENSING:



**CONTACT SIVA
ENTERPRISES TO
ACHIEVE YOUR
CANNABIS BUSINESS
OBJECTIVES TODAY**

LOS ANGELES, CA

818.562.3362

INFO@SIVALLC.COM

SIVALLC.COM



CANNA-VAN CAN!

Orders are increasing for Quality Coachworks, which custom-converts vans for use in the cannabis industry.

ONE OF THE BENEFITS of cannabis legalization is the growth of cottage industries serving the food chain. One such business adapts vehicles for use transporting products and cash safely and securely among cannabis companies. It's a vital component of the cannabis ecosystem that surely will see exponential growth even after the state removes the need to convey large amounts of cash. The necessity to transport product among myriad businesses and then to retail outlets will continue unabated.

Ontario, California-based Quality Coachworks was founded forty years ago, long before cannabis legalization began in earnest, but the company has provided vans to the industry since 2013, when the first of its cannabis-specific conveyances was introduced. The business is owned and operated by Dominick Vitelli and his family, and according to its website, "specializes in the design and building of stretch limousines, luxury hearses, custom coaches, armored vehicles, limo buses, and executive vehicles. We also do specialty services such as bulletproofing, ballistic armoring, custom upholstery, and redesigns of existing conversions."

A few years ago, Vitelli's friend Seth Doulton brought him an opportunity. Doulton, who had built specialty vehicles, custom cars, and monster trucks for the automotive aftermarket since 1973, also worked for the State of California.

“I’ve been working with Fiona Ma, chair of the California State Board of Equalization, for ten years,” Doulton explained. “One of my first job assignments with her was to find out all I could about the vibrant cannabis industry.”

It did not take long for Doulton to identify a need unaddressed in the market. “One of my first trips was to Denver, Colorado, to meet with state officials and stakeholders about their cannabis industry,” he said. “While on the trip, I saw cannabis being delivered in repurposed armored trucks, like Brinks trucks. On the flight home, I kept thinking there’s got to be a better way. These large trucks have a lot of issues, including heavy bodies and expensive upkeep. They also have built-in features that cannabis delivery does not need, and they don’t have the dozens of security features state cannabis regulators require. Not to mention, they’re expensive and hard to finance. On the flight, I put together a list of what I thought was needed for secure transport of cannabis products.

“With the help of a good friend [Vitelli] who’s been in the custom specialty car business for over thirty years and has developed security vehicles and limousines for people all over the world, we created the Canna-van,” he added.

Thus began a partnership that now produces a majority of the secure transport vehicles relied upon by California cannabis businesses.

Doulton designed two basic models depending on the client’s transportation needs. “In 2013, we introduced the Transit Connect, a small van built by Ford. These vans come with over fifty modifications, like insulation, temperature control, camera systems, full-time GPS tracking, LoJack, and security doors,” he said. “We can produce these vans in seven to ten working days, depending on the modifications. They start at just under \$50,000 each.”

In 2014, the company introduced larger transit vans with a larger wheelbase and a stand-up roof. “These security vehicles can include all the same modifications as the smaller version, plus many more,” explained Doulton. “They start at just under \$60,000.”



Mobile security camera.



Secured compartments.

QUALITY COACHWORKS swears by its Ford vans, which Doulton said are easy to lease or purchase, with options for interest rates when clients decide to finance a model. “A lot of the delivery vehicles that Quality Coachworks produced have been on the


road for almost three years with hundreds of thousands of miles on them, and they are still running strong,” said Doulton.

Original equipment manufacturers’ factory warranties are available, and the quality of the conversions provides other benefits, according to Doulton. “One thing the distributing companies really like about these security vehicles, as well as the insurance companies, is that each different cabinet in the van is digitally controlled and the driver never knows the combination until he shows up at the dispensary,” he said. “There’s no real liability to the driver as far as product loss.”

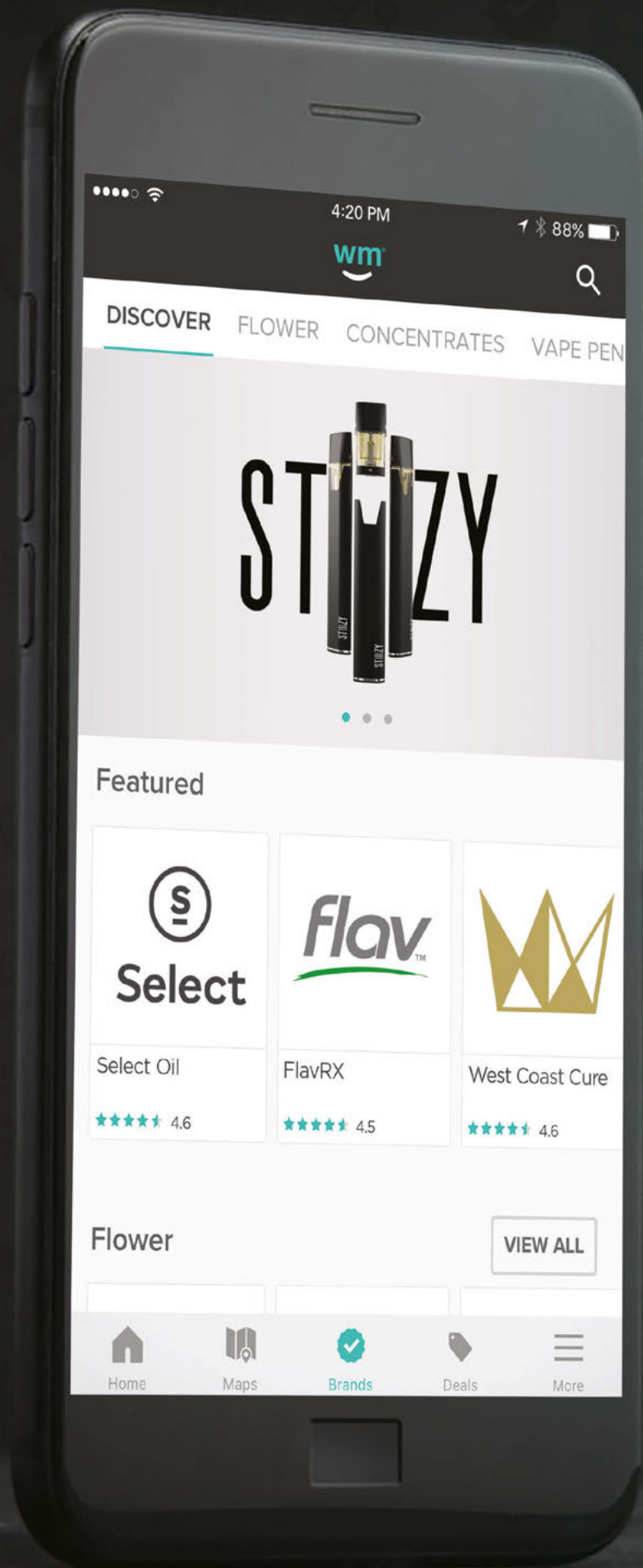
That attention to detail extends to the future needs of the industry. “Quality Coachworks spends a lot of energy watching all the different state regulations and [U.S. Department of Transportation] rules, so we can update our vehicles to exceed anything any state would consider,” said Doulton. “We are very proud that every police chief and Highway Patrol agency official that reviews these vehicles has given them a thumbs-up.”

The company is seeing interest in the vehicles from different parts of the industry. “The largest percentage of the security vehicles are going to distributors, but growers are now coming forward who want to transport their product in a secure way,” said Doulton, adding that all security delivery vehicles can be outfitted with armored windows and doors for driver protection.

“We have quite a few distributors adding to their fleet every year,” he continued. “Since November of last year, right after the [California] emergency regulations were released, things have really taken off. Everybody felt comfortable about ordering them.”

The company primarily serves West Coast clients, but that may change soon. “Most of our security delivery vehicles have been delivered to customers in California and Oregon,” said Doulton, “but with other states coming on all the time, Quality Coachworks is looking forward to marketing its vans in other states.”  —Tom Hymes

QUALITYCOACHWORK.COM





Discover brands. Find your product.

It's the way we connect you
to the best marijuana brands.
Let us be your plug.

weedmaps.com/brands




Own a brand and want to be listed? Call 800-938-1392

ONE STANDARD, INDIVISIBLE

The lack of a universal standard for cannabis testing hampers labs' efforts to ensure safe, consistent products.

BY LEAH MAURER



TESTING LABS ARE ONE OF THE MOST CRITICAL COMPONENTS IN THE SEED-TO-SALE CYCLE OF THE CANNABIS PLANT. They offer the producer (or processor or edibles maker and so on) valuable information about their products, help states regulate contaminants, and allow consumers to feel both safe and informed about what they purchase.

As with most sectors of the cannabis industry, testing labs have gone through a great deal of change in a very short time. And, as more states come online with legalization, the demand for expansion of the testing sector increases.



Photo courtesy of Steep Hill Labs



“The reality is that at this time there are not any standards from state to state when it comes to cannabis testing. Being that there is not a national standard of testing means that every state has somewhat different rules.”

—Robert Teitel, president, Iron Laboratories

EXPANSION OF THE TESTING LAB SECTOR

According to a recent report from Research and Markets, the global cannabis testing market is expected to reach \$1.4 billion by 2021, up from \$822 million in 2016. However, with each state mandating different regulations, a lot of variability remains in both requirements and methods. Until there is federal legalization, and thus standardization in the sector, state-to-state variability between labs likely will continue, as will a great deal of variability between how testing labs in cannabis and testing labs in other industries operate.

Normally, for food commodities such as apples, strawberries, grapes, and other types of produce, the Environmental Protection Agency sets tolerance levels and the Food and Drug Administration, along with the U.S. Department of Agriculture, enforce those levels. However, since cannabis is a Schedule I drug, testing labs are deprived of federal standardization and regulatory support.

As a result of federal prohibition, states have attempted to create their own regulations and standards independently of one another, resulting in a patchwork of laws.

THE NEED FOR STANDARDIZATION

“If you think of cannabis as a material, then working on testing standards is no different than for any other material,” according to Dr. Ralph M. Paroli, chairman of ASTM International’s D37 Committee on Cannabis. ASTM develops and publishes consensus technical standards for a wide range of materials, products, systems, and services across a variety of industries. Some 12,575 voluntary consensus standards, often incorporated into government regulations, operate globally. “From the point of view of the science, a material is a material and the testing needs to accurately measure and quantify the components you are trying to analyze. In fact, quite a few of the members on D37 are also members of other ASTM committees, so we bring the experience to developing these new standards in cannabis. The main difference is that it is very difficult to ship cannabis samples to labs between states or countries. As a result, traditional round-robin testing is more difficult, or even impossible.

“Once cannabis standards are developed, they will be of use to the various regulators,” Paroli continued. “As far as testing labs are concerned, once the testing



WELL BEHAVED

WOMEN

SELDOM MAKE

HISTORY.

-Laurel Thatcher Ulrich

In celebration of National Women's History Month, PharmLabs is proud to say we believe in the empowerment of women. Overall, our laboratory management teams are comprised of 71% women.

Thanks to the team's hard work, we are ISO/IEC 17025:2005 accredited, but that's just the beginning! *We deliver fast & accurate results with a price match guarantee.*

With three convenient locations in Southern California, we are expanding rapidly to an area near you!

**Make history with PharmLabs by calling us today for California
Compliance testing and results you can trust.**

PharmLabsCannabisTesting.com | info@pharmlabscannabistesting.com
San Diego: 619.356.0898 | Coachella: 760.279.8279 | Long Beach: 562.222.0562





“Once testing standards are developed, testing labs will be more confident in using standards that have gone through precision and bias vetting.”

—Dr. Ralph M. Paroli, chairman,
ASTM International D37 Committee on Cannabis

standards are developed, testing labs will be more confident in using standards that have gone through precision and bias vetting. This will help address some of the complaints that have been recorded regarding going to different labs and getting different results for THC content, to give an example.”

Another organization that is helping with testing standards is the American Association for Laboratory Accreditation (A2LA). A2LA is a non-profit, internationally recognized accreditation body in the U.S. that offers a full range of comprehensive laboratory and laboratory-related accreditation services and training. A2LA has been working with tobacco, botanical, and natural-product testing laboratories for some time but started looking seriously at the cannabis industry’s testing sector in May 2013 when Maryland established its medical marijuana program. In 2014 A2LA began advising cannabis policymakers and has had a strong focus on helping to increase the quality of testing associated with the cannabis industry ever since.

“At the end of the day, cannabis testing is analytical chemistry and microbiology analysis of botanicals and botanical products for contaminants and adulterants,” said Roger Brauning, A2LA’s biosafety program manager and the point person for interacting with other organizations including, for the past few years, those focused on cannabis. “Thus, in so many ways this activity has much more in common with other analytical testing approaches than it has differences. That said, unlike comparable food, tobacco, and botanical product testing, there are real structural problems unseen in those other industries, owing primarily to the federal government’s classification of THC as a Schedule I drug. It should be noted that this is the only plant that is so classified, but it prevents the FDA from being a partner in setting up rational approaches in this industry.”

“Because of the scheduling, we have not yet seen adoption of agreed-upon and multi-laboratory-validated industry standard analytical methods, nor has there been much progress in the development of plant-derived primary reference materials,” he continued. “These areas are starting to be addressed by prominent organizations, but there are still other areas of concern that are related to development of double-blind proficiency testing programs.”

The choice of professionals



Rare Dankness Industries, Denver - CO



GAVITA
HORTICULTURAL LIGHTING

www.gavita.com



“Cannabis is the only plant classified as a Schedule I drug, and the classification prevents the FDA from being a partner in setting up rational approaches in this industry.”

—Roger Brauning, biosafety program manager, A2LA

OLDER VS. NEWER MARKETS

As with all other sectors of the cannabis industry, one hopes testing lab practices and standards improve over time. Colorado and Washington were the first states to legalize adult-use cannabis, and while the market in both states is going well, testing has not yet come into its own.

Dr. Don Land is the Chief Scientific Consultant for Steep Hill Labs, a company with both national and international presences in the testing sector. He explained older markets generally have laxer testing standards than those found in newer markets. For example, he said neither Colorado nor Washington tests for pesticides, even though such testing is standard in almost all other cannabis testing programs worldwide. “In many ways it takes so long to get through the legislative or policy process to get regulations changed that it’s often easier from a business standpoint for these programs to continue on with poor testing regulations and standards than to try to change them,” he said. “We have found that often newer markets learn from the mistakes of older markets, and because of this are able to jump so far ahead in their initial implementation that their systems are better.”

Land and his team at Steep Hill have consulted about testing regulations and standards with both industry leaders and policymakers. When asked what states he felt were doing things right, he said, “Oregon did a great job... They learned quickly from other states and have been responsive to meaningful changes in testing standards.” He also mentioned both Hawaii and Maryland have instituted exemplary programs.

While Oregon excelled in some areas after adult-use legalization, the state struggled with other areas. For instance, the initial rules for testing and lab accreditation rolled out in October 2016 and contributed to backlogs at laboratories and shortages of products on dispensary shelves. Two months later, regulators and policymakers eased the pressure on their new market by issuing new rules that reduced the number of times a harvest, a batch edibles, etc. must be tested. By adjusting testing frequency, regulators reduced costs for growers, manufacturers, and others, and consequently for consumers. Keeping prices for legal cannabis affordable reduces the attraction of the black market.

"Many states look to Oregon's list of fifty-nine pesticides as a starting point, but from there modifications are made and each state develops its own list of testing requirements," said Dr. Bob Clifford, general manager for Shimadzu Scientific Instruments, which has worked with cannabis testing labs for the past seven years. "For example, California has a list of sixty-six pesticides compiled from the Oregon, Colorado, Washington, and Nevada lists. Nevada and Colorado list twenty-four and fifteen pesticides, respectively."

Jeremy Sackett, chief science officer for Oregon-based Cascadia Labs, said no regulations are perfect as originally written. "Any new regulations, testing or otherwise, always require a ramp-up period to realize full success," he said. "This is particularly true when dealing with both a new industry and a new set of regulations. The states that have implemented testing requirements for their regulated cannabis markets have certainly seen challenges ranging from high failure rates for pesticides to insufficient laboratory accreditation requirements. It is also important that scientific experts and the regulatory community continue to monitor the trends in testing results to identify how reduction or increase in certain testing requirements may help create a successful cannabis industry."

VARIABILITY IN REGULATIONS AND STANDARDS

Most states test for pesticides, microbes, mycotoxins, moisture content, water activity, potency, and residual solvents. While they aren't included everywhere yet, tests for heavy metals (lead,

cadmium, arsenic, etc.), cannabinoids, and terpenes are common. Even the tests common across all states are subject to varying requirements between states, and no states include exactly the same analytes on their lists. For example, some states require testing for twenty pesticides, but California's new regulations specify sixty-six. The maximum allowable limits for each analyte tend to vary, as well.

Shimadzu's Clifford pointed out "one similarity is the testing for potency of cannabinoids, primarily THC, THCA, CBD, CBDA, CBG, and CBN. For heavy metal testing, many states test for arsenic, cadmium, lead, and mercury. Generally speaking, though, testing from state to state is more different than similar."

Robert Teitel, president of Iron Laboratories, agreed. Because Iron operates in medical-only Michigan and adult-use Oregon, Teitel and his team have an uncommon opportunity to observe how vagaries of state law affect the industry's best efforts to provide a clean, reliable product. "The reality is that at this time there are not any standards from state to state when it comes to cannabis testing. Being that there is not a national standard of testing means that every state has somewhat different rules," he said. "But, we've seen Oregon really take the lead when it comes to cannabis testing. They set standards that all labs within the state must follow, and [the standards are] administered by the Oregon Environmental Laboratory Accreditation Program. Labs in Oregon have to operate with an environmental accreditation.

"At a minimum," he added, "most states are requiring pesticide

STRUCTURES EQUIPMENT COVERINGS



Nationwide Shipping
Full Online Catalog
Expert Consulting



 @foreverfloweringgreenhouses
 Forever Flowering Greenhouses



530-273-5483/888-784-4687
info@foreverflowering.net
www.lightdep.com

Seek and Ye Shall Find

As with any other agricultural product designed for human consumption, cannabis and cannabis products are tested for contaminants that could poison consumers, as well as to ensure beneficial elements exist at the levels claimed. For what do labs look, and why? Here's a quick rundown.

CANNABINOIDS including THC, THCa, CBD, CBDa, and CBN determine the effect a given product produces. The percentage of each cannabinoid is important for correct dosing.

TERPENES including α -pinene, β -myrcene, α -humulene, β -caryophyllene, and caryophyllene oxide impart fragrance and may have medicinal benefits.

ORGANIC SOLVENTS like butane, propane, isopropanol, and acetone are used to extract cannabinoids and terpenes from plant material. After most of the solvents evaporate, remaining chemical traces are purged using heat or vacuum, but it's extremely difficult to purge them completely. Lab tests determine whether solvent residue is at or below safe levels.

PESTICIDES including organophosphates, pyrethroids, and carbamates may be reasonably safe for the environment when responsibly used, but ingesting even trace amounts can be harmful for young children and those with compromised immune systems.

HEAVY METALS—primarily arsenic, mercury, lead, and cadmium—migrate into plant tissue from the soil and groundwater. Human bodies absorb heavy metals much faster than they eliminate them, so repeated ingestion or inhalation of even small amounts can be toxic.

MICROBIAL CONTAMINANTS including mold, mildew, bacteria, yeast, mycotoxins (fungi), and aflatoxins can cause everything from allergic reactions to organ damage and cancer.

screenings—although every state has different banned pesticides—and potency profiles, typically [including] just THC, THCA, CBD, and CBDA.”

Brauninger of A2LA added, “To date, there is no uniform approach to managing quality of the laboratory output. Some states have simply placed relatively generic requirements for laboratory quality, while others such as California have come up with quite an extensive regulatory scheme. Most states are somewhere in between.”

IMPACT ON OTHER SECTORS OF THE INDUSTRY

So, how does this patchwork of unpredictable testing regulations and standards affect other companies in the cannabis industry? Oregon-based Sweet Cannabis, a production, processing, and distribution company, recently expanded to Nevada. Sales Director Tom Bowers said testing mandates are very different between the two states.

“Nevada’s rules and framework contain requirements that some consider obsolete for the industry, such as pharmacopeia methods for potency determination, when better methods exist,” he said. “Oregon is leading on pesticide testing, while Nevada tests more broadly for things like mycotoxins, which aren’t required in Oregon. There are other small differences, such as increments for testing batches. For instance, in Oregon thirty pounds of flower would have to have two samples pulled, one for each fifteen pounds. In Nevada, flower is tested per five-pound increment, so three times as many tests are required.”

Additionally, Bowers noted that Nevada’s state oversight and regulation of labs is still in a developmental phase, which may lead to variances between laboratories. Recently, Nevada suspended the licenses of a number of labs without explicitly stating the reasons for the suspensions, leaving fewer options for producers and processors and making it difficult for companies to establish long-term relationships. On the other hand, Oregon has a more robust accreditation system with direct oversight at a state regulatory level. “We’ve spent quite a bit of time finding stringently thorough laboratory partners in both Oregon and Nevada, since testing is of paramount importance for consumer safety and is also one of our top three business expenses,” Bowers said.

To illustrate, before Sweet Cannabis launches an edible in either state, the product must be sent to a lab for testing in three stages: as raw material (flower), in concentrate form, and in its final form. Each stage can cost hundreds, if not thousands, of dollars for each product batch.

HURDLES TO STANDARDIZATION AND EXPANSION

A lack of federally funded cannabis research, coupled with the lack of federal oversight and guidance about safety standards, hampers officials’ ability to establish regulations and labs’ ability to design and perform tests that are both useful and cost-effective. But that’s not the only way in which a unified standard could benefit the industry as a whole. For one thing, economies of scale likely would have a positive effect on everyone’s bottom line as labs expand into additional state markets. As things stand now, labs not only must spend millions to construct new facilities, equip them with the required equipment, and hire suitable employees, but additional investment is required to parse differing regulations and train staff about meeting state-specific mandates.

According to A2LA’s Brauninger, the biggest challenge to expansion “is getting the federal government to allow science to cross state borders legally. This would greatly impact the industry’s ability to standardize areas of greatest need, including the ability to have an agreed-upon set of standard, multi-laboratory-validated cannabis methods and plant-derived primary reference materials that would feed into being able to create well-organized, multistate, double-blind interlaboratory proficiency


testing programs.” By establishing such a system, “the industry, the regulators and, most importantly, the public would gain greater trust in knowing the products they are receiving have been tested in a statistically correct and scientifically representational approach.”

Aubrey Belisle, founder and co-owner of Pure Cannabis Consulting, added, “When I read a ‘new’ state’s rules and regulations, I can see many of the same themes transcending. Since 2014, the broader goals of every state that has implemented a marijuana program are to oversee the prevention of diversion of both money and marijuana, prevent illegal sales to minors, collect tax revenue, and ensure public safety. Fortunately, issues like community impact are gaining more traction as legalization matures, invoking steps toward equity for those disproportionately affected by the War on Drugs.

“Having said that, every year the licensing process and general compliance requirements get a little more sophisticated for each state,” Belisle continued. “State governments that take on the implementation of a marijuana program are pioneers in their own right and must revise their rules and regulations constantly. An essential tool for a newer state is the data generated from older markets. Newer states do appear to look to these established states for guidance but will ultimately create a program that meets their regional needs.”



GOING FORWARD

The Association of Commercial Cannabis Laboratories, based in California, is hoping to lead the industry toward nationwide standardization. Executive Director Jeffrey Raber said the ACCL’s members are working together to establish a set of protocols for the proper analysis of contaminants like pesticides and residual solvents. He also said standardization is “of the utmost importance,” particularly in order to ensure the tests mandated are necessary and labs provide responsible, reliable results. 



Be in Compliance

Child Resistant / Senior Friendly

Metered Dose Pumps and Packaging



Contact David Meshberg
david.meshberg@packagingconcepts.com

203-209-3625







KEEPING IT FRESH

Scott Martin merged family, business, and innovation to develop a next-wave product.

WHO SAYS the mortgage industry is cursed? Scott Martin was a very successful mortgage broker until his company merged with a larger firm in 2013. During the merger, Martin met a client who owned a patent for canning ammunition in a hermetically sealed container with a modified atmosphere.

Martin was intrigued. The two began discussing a patent he had filed that duplicated the ammunition patent for the packaging, storage, and preservation of controlled substances. “We negotiated a partnership, and in 2014 we worked together to receive the patent,” noted Martin. “N2 Packaging was born and is now my primary focus.”

Martin adapted to the cannabis industry with the flexibility and patience he learned in the mortgage industry. In fact, N2 changed its business model multiple times to suit the reality of the cannabis market. While Martin likes to strive for a lean, efficient

operation, N2 is growing to meet demands. He oversees fifteen full-time employees in the United States and Canada.

“We felt this would be a beneficial solution for growers because it would remove shelf life concerns from their business model,” he said. “We thought consumers would appreciate the consistently fresh quality of the product that was associated with the N2 brand.”

The process has not been without obstacles. Because consumers were accustomed to buying cannabis in a clear bag they could open and smell, N2 received significant negative feedback about the inability to “see it, touch it, feel it” before purchase. “We often heard ‘I’m not putting my weed in a cat food can,’” he noted with a chuckle. “We have worked on solutions to these hurdles but still occasionally hear the same concerns. With time, people are beginning to see the quality and consistency our product offers, and they are changing their thinking.”

WHAT MAKES N2'S NITROGEN CANS UNIQUE?

The main culprit of degradation in cannabis is oxygen. Remove oxygen from the equation, and that creates a time-capsule-like effect. Our patented process flushes the can with liquid nitrogen—a very small amount—which bounces off any solid object, essentially burning off in the can while pushing the oxygen out. After that happens, the can is hermetically sealed, creating a perfect, modified atmosphere: no oxygen, no light.

Nitrogen is most commonly known as an inert gas. Since the cans' atmosphere is rid of the oxygen, the cannabis flower is safe from any mold, microorganisms, and bacteria. The master growers I grew up learning from used nitrogen to preserve their flower. Our process gives you the opportunity to preserve your flower until you are ready to push your product, or until the price is right. Extended shelf life is key for this industry. On top of that, the N2 process provides a dream to cultivators: farm-to table-freshness; good in, good out. What you cure and put in the can is how the consumer will receive it.

THE CANS ARE TAMPER-PROOF, RIGHT?

We are particularly proud of our child-resistant, resealable-lid option. I became very concerned about the childproof requirements that initially rolled out in Colorado, and I immediately began working on a solution. We searched everywhere to find a childproof lid but discovered there had never really been a need for a childproof

lid to reseal a can, so there was nothing out there. We knew this would be key to remaining compliant, so we spent ten months designing a lid that would meet the child-resistant and senior-friendly requirements. These are all-important features that make N2 a unique and practical way to package cannabis.

WHO IS N2'S CORE CONSUMER?

We deal with just about everyone, but at the core is the cultivator. The opportunity for growers to package in-house is a pretty incredible thing. Presentation is a major factor for any type of retail. Having this professionally packaged flower, and wrapping it in your very own marketing, brings a bigger sense of ownership to brands. The can fits in your hand perfectly. There's something about it people gravitate toward.

HOW'S BUSINESS?

We made a few key decisions in 2017 that will help us greatly in 2018. The first was to purchase the equipment company that has been supplying all of our systems, which has allowed us to control our growth and the process. Second, we contracted to manufacture our own cans to control our inventories, and third, we have two fulfillment centers—one in Arizona, and one in Twin Falls, Idaho. We receive approximately fifteen license applications per week from facilities all over the world. Having the ability to scale will greatly help us to fulfill those requests.



Scott Martin, left, and his partner Mike Standlee are particularly proud of N2's innovative resealable lids that are both child-resistant and senior-friendly.



Team N2 Canada is based in Kelowna, British Columbia.

WHAT HAVE BEEN YOUR GREATEST CHALLENGES?

One of our first big hurdles was gaining consumer acceptance and getting consumers to think beyond the “see it, touch it, smell it” concept. We still struggle with that in some states, but we have worked hard to make sure any product branded with the N2 logo is a high-quality product from a reputable, licensed grower. Quality control is paramount to our process. Another huge obstacle has been dealing with the same issues everyone in the cannabis industry is facing: trying to operate legally despite the opposing state and federal laws. Many suppliers either won’t work with us or raise prices to cover “additional risk” of working in the cannabis industry. We’ve had all of our business and personal banking accounts shut down multiple times because of conflicting laws and regulations.

Whenever possible, I remain actively engaged in meetings with legislators and lawmakers to provide input and stay on top of the evolving rules and regulations of the industry.


WHAT’S A TYPICAL DAY LIKE AT N2?

I like to get to work at 8 a.m., make calls, do orders, etc. Then I like to meet with staff. I live in Idaho and I operate out of our Idaho fulfillment center, but our company headquarters are located in Scottsdale,

Arizona. Unfortunately, that means I spend a lot of time on the phone and a lot of time in airports. I typically travel three days a week to meet with current and potential clients.

There is no such thing as 9-to-5 Monday through Friday office hours for me. If I’m awake, I’m working. It has been a grind, but everyone at N2 is pushing hard to build our company, and I love being part of it.

WHERE DO YOU SEE N2 HEADING IN 2018?

I see us continuing to grow into the more heavily regulated U.S. and Canadian markets. We will also continue to look for advancements with our packaging. We will be rolling out our Clear Can at the end of the first quarter and our Clear Lid for the metal can by the end of the year.  —Rob Hill

N2PACK.COM



OUR PROCESS GIVES YOU THE OPPORTUNITY TO PRESERVE YOUR FLOWER UNTIL YOU ARE READY TO PUSH YOUR PRODUCT, OR UNTIL THE PRICE IS RIGHT. EXTENDED SHELF LIFE IS KEY FOR THIS INDUSTRY. ON TOP OF THAT, THE N2 PROCESS PROVIDES A DREAM TO CULTIVATORS: FARM-TO-TABLE FRESHNESS; GOOD IN, GOOD OUT. WHAT YOU CURE AND PUT IN THE CAN IS HOW THE CONSUMER WILL RECEIVE IT.

—Scott Martin, CEO, N2 Packaging Systems





*Is California ready to begin comprehensive regulated testing of cannabis products?
Two of the industry's leading labs weigh in.*

BY TOM HYMES

Of

the many license types available to people interested in operating a cannabis business in California, the only one that cannot be combined with any other is for a testing lab. That is an indication of how essential the independence of the lab is to the viability of the regulatory scheme and the state's ability to maintain control.

Labs are unique in other ways, as well. They traditionally and for the foreseeable future hold the keys to unlocking the secrets of the plant itself, and they require extraordinary amounts of money and talent to operate at scale and under International Organization for Standardization (ISO) certification, the latter of which is required for state licensure. It's the cost of doing business on the up-and-up going forward. As instrumental as the labs have been in the development of California's medicinal gray market, they became an indispensable player in the regulated economy, for better and worse.



SC Labs technician analyzes batch sample.

To get a sense of California's readiness to engage its new regulated testing regime—which phases in via a three-step process of additional tests that commenced January 1 and will culminate December 31, with the METRC tracking system expected to be online by July 1—in early February we visited SC Labs and Steep Hill Labs, two of the industry's leaders. At each location we found beehives of activity involving mostly scaling and training, and pools of positivity about the future combined with the sober recognition a lot of work still needs to be done if California is to avoid the worst mistakes made by other regulated states and take its rightful place as a world-class cannabis marketplace.

SC Labs

SC Labs's main facility sits on a quiet cul-de-sac in a little slice of heaven called Santa Cruz, California. At around 9,000 square feet, the lab bulges with equipment and is in a state of relentless renovation and reallocation of space to make way for more testing capacity. Capacity, which will allow for faster turnaround of results, is the name of the game, the Holy Grail, and the only way SC believes it will be able to meet the testing and analytic needs of the largest cannabis-producing market in the world.

Josh Wurzer, SC Labs's co-founder and president, is a passionate advocate for the business he's in and the company he runs. During a day of frenetic activity, he graciously provided a tour of SC's main

lab and several smaller rooms, each of which was being assigned a unique and coordinated role in the evolving regulated testing process, and each of which was being fitted with new, often more powerful and very expensive instrumentation.

"One sample takes five departments to coordinate among themselves," said Wurzer, who pointed out that everything had changed in the past few months and soon would change again. "In two months, none of this will be the same," he said. "All of the office people are moving downtown. We've been in expansion mode, and as the year goes on we'll continue to expand, including within this space."

Teams of new employees filled the hallways on the day of our visit. "We have a lot of training going on," noted Wurzer. "This time last year we had about thirty employees. Now we have all new employees, all new methods, all new machines, all new rules—just from six months ago."

Outside, a small fleet of new vans stood ready to collect samples from licensed cannabis distributors throughout the state. "A distributor cannot give us samples for regulatory testing," said Wurzer. "We have to pull samples ourselves. We go in with two-person crews, wearing full-body suits in sterile conditions, and will be presented with the entire batch. If it's harvest flower, it can be up to a fifty-pound batch. We use randomized sampling techniques to collect a composite sample, collect a field duplicate sample as well, and

DON'T ASK WHAT POLYSCIENCE CAN DO FOR YOU.
ASK WHAT YOU CAN DO, WITH THE HELP OF



Chillers
—
Coolers
—
Circulators

Extraction
•
Rotary Evaporator
•
Short Path Distillation
•
Cold Trap



It's not about hot and cold. It's about how hot and how cold and how you get there. At PolyScience, we don't make products in a vacuum. We make products to complement your system, so your business can perform at its best.

American designed and
American built since 1963.

Find out more at

EXTRACTIONCHILLER.COM



Josh Wurzer, President, SC Labs, holds a sample being processed.

then seal up the batch and bring it back here for testing. That batch cannot be released for sale until we send the cleared test results to METRC, saying it passed the test. If it failed because of pesticides, they can do a remediation step, but we have much more transparency into the actual batch that the test is being performed on.” While the lab cannot yet integrate with METRC, the state has asked all licensed entities to email test results and other documentation in the meantime.

Non-regulatory testing, used for research and development, also will continue to be offered as a paid service to clients in the space. “In R&D testing, someone sends or brings us a sample to be tested for their internal use,” explained Wurzer. “We don’t need to collect it or do nearly as much sampling.”

SC Labs formerly operated another testing lab farther south, in Santa Ana, but recently converted that facility for another use. “It’s now a field office, just like the Sacramento field office or the Santa Rosa field office,” said Wurzer. “We’re working with a hub-and-spoke model now. We’ll have people doing far-flung runs to Southern California and Sacramento.”

As the company scales, the pace of regulatory sampling remains steady, if slow. “Right now, we’re only doing about a hundred samples a day for regulatory compliance, but as the year goes on that

will increase drastically,” said Wurzer. “Our goal was to hit January 1 with all the compliance tests required through July 7—which we didn’t find out until November 15, so that was a task in and of itself—have the tests prepared, and then build capacity throughout the year.”

Increasing capacity is essential. “Turnaround time is a big consideration for us, philosophically,” noted Wurzer. “We’re only going to accept as many tests as we can do, so we can keep our turnaround time to a minimum.”

Of course, all this testing comes with a high price tag. “For one pesticide test, I have to run a test on one machine and have it analyzed, and then run a test on another machine and have that analyzed. Each machine costs about half a million dollars,” said Wurzer. “You need a million dollars to do your first pesticide test, and then residual solvents are the same thing.” Of course, that amount does not account for the professionals doing the analysis, all of whom hold graduate degrees.

The costs will, of necessity, be passed along to businesses already squeezed by the price of legalization. “Costs may go up 50 to 60 percent,” said Wurzer. “I think we’re around \$600 for the Category 1 and 2 sample, through July 1. It amounts to about 1 or 2 percent for cost control and safety, which I think is reasonable. We understand the burden falls heavily on the little guy, but we don’t think the cost of testing should put anyone out of business.”

A year from now, however, costs and thresholds will rise again. The final panel, which kicks in December 31, includes nine tests, including for heavy metals and micro-toxins, and will cost almost \$1,000, according to Wurzer. “We probably won’t be the cheapest lab, but we will be competitive.”

According to co-founder and Chief Executive Officer Jeff Gray, SC Labs, which also operates in Oregon, is poised for growth. “We’re all blessed with greater opportunities at this moment in that regulation does a number of things, including allow us to invest in our business in a way that we know long-term those investments are safe,” he said. “That’s why you’re seeing so much capital flow into the industry. It’s a balance of risk and reward.

“The demand for lab services prior to regulation was really by the good actors, who represented a small percentage of the industry,” he added. “The number of labs servicing the sector were few because there

“

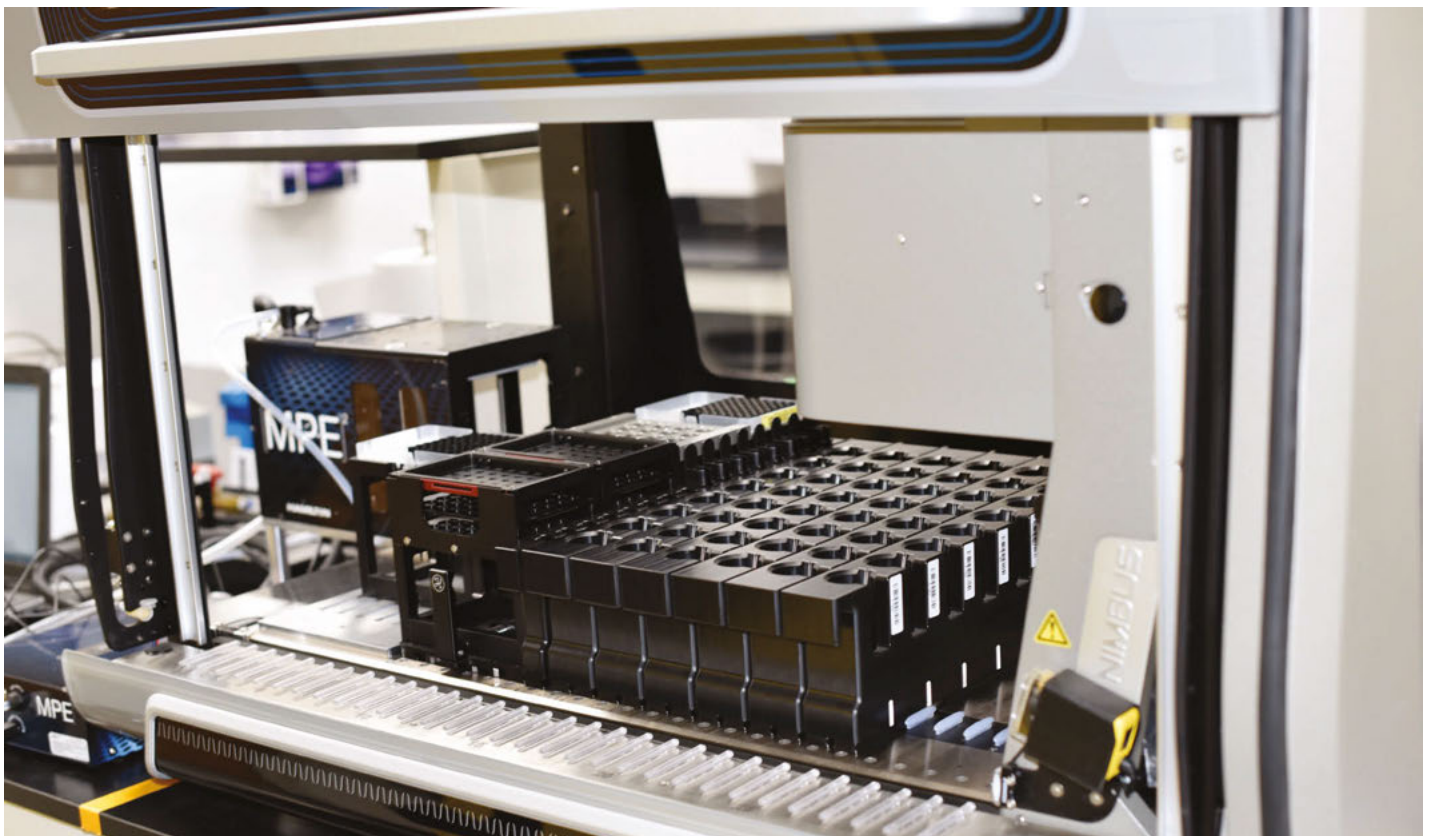
There are not enough companies, including even when the big companies come in, to do all the testing necessary to supply the market.

— Jeff Gray, CEO, SC Labs

”

really wasn’t that much there. But all that has changed. About thirty labs applied for licensing. I couldn’t have named ten last year. People are seeing the opportunity. What’s different about our sector and other sectors in the cannabis industry is that the demand for our services so far outpaces supply that we are not going to be subject to the predatory practices of larger companies. There are not enough companies, including even when the big companies come in, to do all the testing necessary to supply the market. It’s not about how many labs there are. It’s about how much capacity is necessary.”

The going will be rough at first, he added, especially the possibility of bottlenecks leading to supply shortages. “Let’s say thirty million pounds of cannabis are produced in California,” he said. “I don’t know if it’s accurate; I would guess it’s more, but if you use that number there will be 8,000 to 10,000 tests necessary per day. But they have now changed the harvest batch size, so divide that by five. Still, it’s seven days a week and just raw flower, not concentrates,



Cannabis testing requires sophisticated equipment.



BUREAU OF CANNABIS CONTROL

All cannabis harvested on or after 1/1/2018 and all cannabis products manufactured on or after 1/1/2018, shall be tested according to title 16 of the California code of regulations, section 5715, and the regulations that follow.

PHASE-IN OF REQUIRED LABORATORY TESTING	INHALABLE CANNABIS	INHALABLE CANNABIS PRODUCTS	OTHER CANNABIS & CANNABIS PRODUCTS
JANUARY 1, 2018			
Cannabinoids Testing	✓	✓	✓
Moisture Content Testing	✓		
Category II Residual Solvents and Processing Chemicals Testing		✓	✓
Category I Residual Pesticides Testing	✓	✓	✓
Microbial Impurities Testing (A. fumigatus, A. flavus, A. niger, A. terreus)	✓	✓	
Microbial Impurities Testing (Escherichia coli and Salmonella spp.)	✓	✓	✓
Homogeneity Testing of Edible Cannabis Products			✓
JULY 1, 2018			
Category I Residual Solvents and Processing Chemicals Testing		✓	✓
Category II Residual Pesticides Testing	✓	✓	✓
Foreign Material Testing	✓	✓	✓
DECEMBER 31, 2018			
Terpenoids Testing	✓	✓	✓
Mycotoxins Testing	✓	✓	✓
Heavy Metals Testing	✓	✓	✓
Water Activity Testing of Solid or Semi-Solid Edibles	✓		✓

and it's only regulatory testing, not R&D. The need for testing is extreme, and the need for quick-turnaround testing is very extreme. It's going to be challenging for people to keep up."

There is another problem. Because of the demand, "you will have labs operating in the market putting out a subpar product, and no one will know the difference. It's easy to tell great flower from dreck, but it's not easy to tell good testing from bad. And there are people saying, 'I need correct and credible science,' and others saying, 'I just need to pass.'"

This also raises the question of testing priorities, and whether smaller distributors or small operations doing their own distribution will find themselves out-leveraged and stuck at the end of the testing line. "We've been working in this market for six years, and we're from the cannabis industry," said Gray. "We're not trying to be leveraged or be part of something that creates leverage over the small participants in the industry. I don't think it's fair, but it's not up to me. I'm not

the fairness police. We have a group of clients that we've served historically, and I'd still like to be able to service them. The industry is here based on these early pioneers. They are a part of this industry and have endured the ups and downs, and we would like to think that we are loyal to those clients.

"We still have market dynamics," he continued. "The way it works for business is that there are economies of scale that have to be reached. If I drive out and collect samples, I can collect 100 at a time or I can collect two. It works to my benefit and cost perspective to collect 100. What we are trying to do over time is limit the proportionate space within the laboratory to be able to serve a greater number of clients rather than have two giant companies we serve. I don't think labs should be used as a tool to leverage a distributor's power over cultivators."

That same optimism and sense of purpose extends to the state. "The great thing about California is that we were the first to go medically legal, and there were no regulations

while the other states put regulations and an organized system in place," noted Wurzer. "Initially, that was annoying—because we were going to other states that were setting up things the way we wish we had them here—but in the end we were able to learn from their mistakes. And I think California and Oregon have got it the most right in terms of the regulations that affect labs—and quality control in general."

Gray said he and Wurzer like the spot their company now occupies both fiscally and in terms of relationships. "Thankfully, almost all our equity is founder's equity," he said. "We've managed to remain profitable and reinvest money into the lab every year. Our path forward in the future is to improve our services. We like the focus of serving California and Oregon, the markets we're in. Beyond that, SC Labs is interested in expanding, but not just in terms of the number of labs we operate, but the range of services we are offering. We come from the cannabis industry. We're cultivators."



the smart choice

CHILLED ALCOHOL EXTRACTION

Colorado Extraction Systems makes industry leading alcohol extraction and separation systems that are easy to use and maintain. All of our systems are designed with one-button technology and backed by expert training. Smart design and superior customer relationships result in unparalleled satisfaction every time.

THE BEST EXTRACTION EQUIPMENT IN THE INDUSTRY

Operating together, our SprayVap™ and Triple X-Tract™ systems provide a seamless closed loop system that allows you to extract all the essentials and create the purest oils possible.

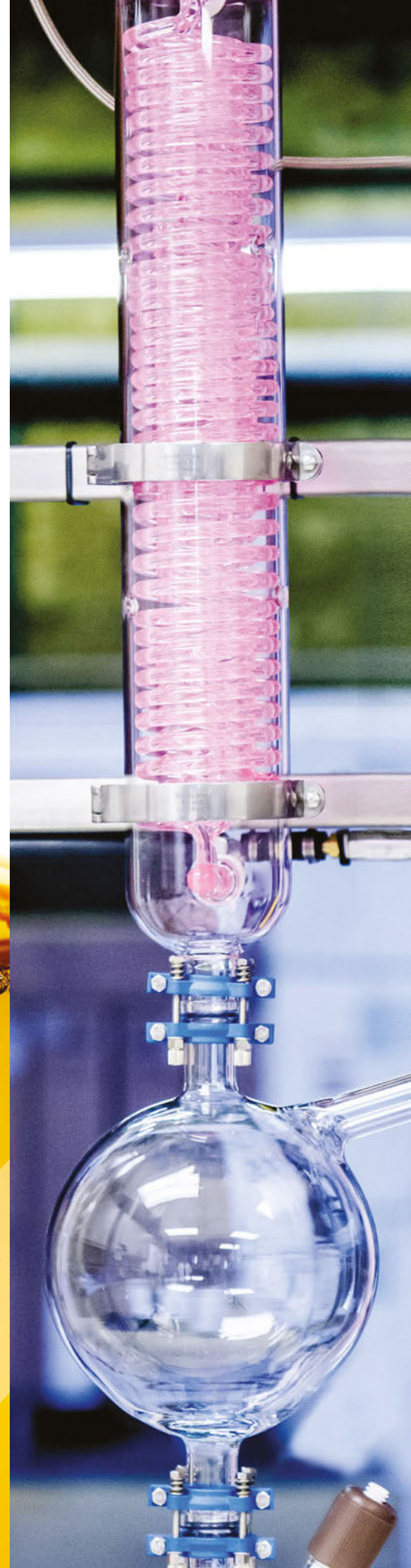


+



SCHEDULE A DEMO

ColoradoExtraction.com | 1.800.513.5560 | sales@coloradoextraction.com





Steep Hill Labs Chief Revenue Officer Tony Daniel shows off his new machine.

Steep Hill Labs

Steep Hill Labs, based in Berkeley, California, opened its doors in 2008 and since then has become the largest cannabis lab in not just the nation, but the world. Currently operating in seven states, Steep Hill also has a global footprint, according to Tony Daniel, a gregarious, articulate man who serves as chief revenue officer for the company.

“We are the largest testing network in the world, and we have the largest cannabis brain-trust in the world,” he said. “Canada, Mexico, Israel, and we just finished our deal with Spain yesterday.”

But Steep Hill was founded in California, and it intends to remain a dominant California player, no matter the cost. “We have an interesting situation here in California,” noted Daniel. “When you look at the regulations and requirements for field testing, the state is asking labs to take on an enormous infrastructure burden to do this. Labs are already the most cost-intensive in terms of equipment and staff and the level of expertise required, and the barrier to entry is extremely high. When you add in ISO certification for every method and every location, it becomes even higher.

“That’s good on the one hand, because we want competent, qualified experts in this field,” he continued, “but in a state as large as California, it’s also a bit problematic. When you factor in that you need to have sampling staff in the field with a certain level

of expertise about both cannabis and science, collecting samples with tongs and gloves, fully suited up, it could take fifteen to thirty minutes to do one sample of a fifty-pound batch in the field. Considering growers are harvesting four, eight, and ten thousand pounds, suddenly you need an army of people.

“There are only a few labs I know of that are taking a run at the entire state,” he added, “and we are one of them. We will service from San Diego to Redding.”

One of Daniel’s main concerns is the ability of smaller, regional labs to keep pace with demand. “One of the things that will manifest here is, because of the barriers to entry, you’ll have regional players who are simply limited by geography,” he said. “This will produce players of middling potential competence that can only grow to a certain degree, which will give [Steep Hill] an advantage. In terms of the overall pool of knowledge to draw from—methods, R&D, product development—it’s very difficult to be a world-class lab.”

Achieving such an advantage is not cheap. “It costs me about a million dollars to process fifty samples a day,” said Daniel. “That’s not necessarily proprietary information, but do the math and sort of let that detonate in your head. Here’s where we’re going: We will be hands down the single largest cannabis testing lab on the planet, and will be for years to come, because we are scaling to several thousand samples a day.”

Like SC Labs's Santa Cruz facility, Steep Hill's main lab in Berkeley is undergoing profound changes. "We are full-steam ahead, doors open, doing business, and scaling at the same time," said Daniel. "We're maximizing every square foot of this facility and will be moving into a 40,000- to 50,000-square-foot lab facility, and there also is a third administrative facility we're moving into this week. This will be the largest cannabis lab in the world."

In addition to the main labs, Steep Hill Express locations offer clients access to limited services closer to home. "Steep Hill Express aren't just remote locations," explained Daniel. "We call them field offices and will have some level of testing capacity, potency and perhaps microbial, depending on the needs of the area."

"Here's what will happen," he continued. "We'll be moving our office from Van Nuys to Long Beach and opening Palm Springs and San Diego, as well. So, we will either send

“

The thing people will quickly realize is the importance of non-regulatory testing throughout the harvest cycle to make sure there are no pesticides.

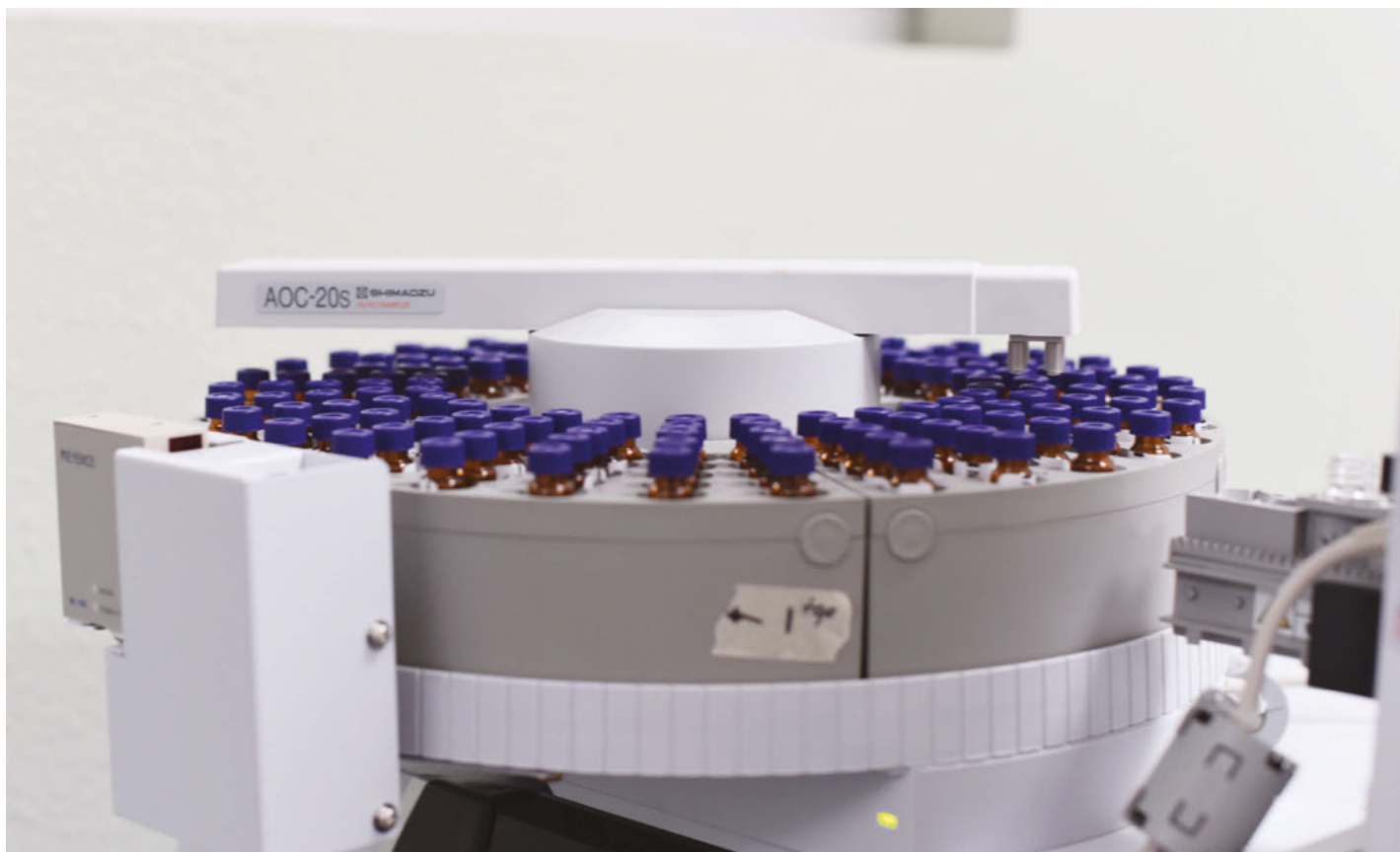
—Tony Daniel, Steep Hill Labs

”

someone to you, or if you are non-regulatory or you can possibly come to the location, you can drop off your sample and in twelve hours it's going to be [in Berkeley]. Turnaround will not be affected. We will have a statewide same-day transport system."

In terms of anticipated demand, Daniel said, "We're scaling our capacity to address the need we see. We're basically looking at what is being grown and how the market is going to evolve and shooting to have the largest lab-testing capacity in California. We will be servicing clients large and small."

On that last point, Daniel opined scale is the solution. "Remember that million dollars for the fifty samples? That requires two or three highly educated people. So, if you are a lab sitting somewhere with two or three people, you've got no redundancy, you're cranking through your fifty samples a day, something breaks down, and suddenly your turnaround time goes to twenty days. And, on the back end, you have to analyze these results, which takes hours. I just don't know how they can do it. I wish them success, because there's a need for more than



Sophisticated testing equipment may cost \$500,000 or more per piece, and most samples must go through tests on more than one machine.

Pesticides that are legal to use on cannabis



The following are examples of pesticide active ingredients that are exempt from tolerance requirements and either exempt from registration requirements or have labels broad enough to include use on cannabis. This is not an exhaustive list of active ingredients that may fit the legal use criteria. The active ingredients are organized by the intended target.

INSECTICIDES AND MITICIDES

- Azadirachtin
- *Bacillus thuringiensis* sub. *israelensis*
- *Bacillus thuringiensis* sub. *kurstaki*
- *Beauveria bassiana*
- *Burkholderia* spp. strain A396
- Capsaicin
- Cinnamon and cinnamon oil
- Citric acid
- Garlic and garlic oil
- Geraniol
- Horticultural oils (petroleum oil)
- Insecticidal soaps (potassium salts of fatty acids)
- Iron phosphate
- *Isaria fumosorosea*
- Neem oil
- Potassium bicarbonate
- Potassium sorbate
- Rosemary oil
- Sesame and sesame oil
- Sodium bicarbonate
- Soybean oil
- Sulfur
- Thyme oil

FUNGICIDES AND ANTIMICROBIALS

- *Bacillus amyloliquefaciens* strain D747
- Cloves and clove oil
- Corn oil
- Cottonseed oil
- *Gliocladium virens*
- Neem oil
- Peppermint and peppermint oil
- Potassium bicarbonate
- Potassium silicate
- *Reynoutria sachalinensis* extract
- Rosemary and rosemary oil
- Sodium bicarbonate
- *Trichoderma harzianum*

VERTEBRATE REPELLANTS

- Castor oil
- Geraniol



Steep Hill's GenKit helps identify male cannabis plants.

one player in the state, but at a certain point it becomes onerous.”

Daniel sees the types of services people need also evolving. “The customer pool is shifting, and the thing people will quickly realize is the importance of non-regulatory—or, let’s call it upstream pre-regulatory—testing throughout the harvest cycle to make sure there are no pesticides. Once something’s been harvested, making sure there’s no microbial contamination. As it goes through the manufacturing process, making sure no other contaminants are being introduced, like residual solvents and things like that. With what’s at stake in each regulatory test, upstream testing becomes incredibly valuable. I anticipate as we see start to see the first crop of failures, we will see the perceived value of upstream testing increase.”

Likewise, many people may opt to test smaller batches. “We’re a state with a fifty-pound batch potential, but you have to be pretty confident in your product to test all fifty pounds,” opined Daniel. “Let’s say it’s \$2,000 a pound. You’re putting \$100,000 worth of product on the line for one test. If you’re willing to roll the dice like that, you need to make sure that when you do roll the dice the odds are stacked in your favor.

“Say I was a collective with 200 outdoor growers flowing into my system,” he continued. “I would be testing ten-pound batches, which was the size originally prescribed. The costs would be great, but the risks would be exponentially higher than if you were an indoor operation that was contained, where you know all your inputs and outputs.”

The point, added Daniel, is Steep Hill developed an entire



department of cultivation scientists for exactly those reasons. “If you’re a distributor, we can go in early to all your vendors and growers and test the air, the soil,” he explained. “We can test the product to make sure you’re good with all your environmental factors, even make sure you’re Cal/OSHA compliant, so that you have the very best chance when it comes to passing the regulatory test.”

Steep Hill has no illusions about the challenges facing California, especially the readiness of growers to adapt to the realities of regulation. “We have an industry that’s been medicinally legal for twenty years, totally unregulated,” said Daniel. “You have growers in the black market, the gray market, and the medical market with a product that is more valuable than gold. The incentive is to maximize yield, which has created an ironic situation where you are maximizing

The Leader in Organic Soils,
Fertilizers, Amendments,
Compost Teas and
Greenhouses

www.vitalgardensupply.com

Photos courtesy of:

Pesticides that cannot be used on cannabis



The following are criteria for identifying pesticides that cannot be used in cannabis cultivation and examples of active ingredients meeting these criteria. This is a representative list of active ingredients and not intended to be exhaustive. The fact that an active ingredient is not listed does not authorize its use on cannabis in California.

PESTICIDES NOT REGISTERED FOR FOOD USE IN CALIFORNIA

If a pesticide product does not have directions for use on a food crop, it cannot be used in cannabis cultivation. Examples of active ingredients that do not have food uses include:

- Aldicarb
- Carbofuran
- Chlordane
- Chlorfenapyr
- Coumaphos
- Daminozide
- DDVP (Dichlorvos)
- Etofenprox
- Fenoxycarb
- Imazalil
- Methyl parathion
- Mevinphos
- Paclobutrazol
- Propoxur
- Spiroxamine
- Thiocloprid

CALIFORNIA RESTRICTED MATERIALS

DPR designates certain pesticides as California restricted materials (3 CCR section 6400). A pesticide can be considered a restricted material for many reasons including designation as a federal Restricted Use Pesticide. Many of these products have product labels that clearly state "Restricted Use Pesticide." Consult your local CAC to determine whether a product is a restricted material. Examples of California restricted materials include:

- Abamectin
- Bromodiolone
- Difethialone
- Bifenthrin
- Cyfluthrin
- Fipronil
- Brodifacoum
- Difenacoum
- Naled

PESTICIDES ON THE GROUNDWATER PROTECTION LIST

Active ingredients that are on the Groundwater Protection List (3CCR section 6800) have chemical characteristics that make them likely to move into groundwater. Examples of active ingredients on the groundwater protection list include:

- Acephate
- Dimethomorph
- Methomyl
- Azoxystrobin
- Ethoprop(hos)
- Myclobutanil
- Boscalid
- Fludioxonil
- Propiconazole
- Carbaryl
- Imidacloprid
- Tebuconazole
- Chlorantraniliprole
- Malathion
- Thiamethoxam
- Diazinon
- Metalaxyl
- Dimethoate
- Methiocarb

PESTICIDE PRODUCTS WITH THE SIGNAL WORD "DANGER"

“

There is a misconception out there that there is a grace period for testing, but everything after January 1 must be tested and the results have to be reported.

— Tony Daniel, Steep Hill Labs

”

yield on a medicine using terrible growing practices. That has led to a ubiquitously tainted supply in California. And the growers, who have thus far resisted change rather than going, ‘Okay, we know regulation is coming, so we’re going to change our ways two years out,’ were harvesting to the maximum up until this December. Now they think they’ve got a year to get their stuff together. However, regulations started January 1. There is a misconception out there that there is a grace period for testing, but everything after January 1 must be tested and the results have to be reported. The farmers can adapt, but it’s going to be a rough re-entry into the atmosphere here.”

Other challenges face the state’s farmers. “What we’re seeing play out, especially in Northern California, is a drama,” Daniel said. “Let’s just take Salinas and Northern California. You’ve got your Pabst Blue Ribbon of weed and your Lagunitas IPA. What we will watch play out over the next year is whether the collective model in Northern California will survive. Let’s say you’re a collective like Flow Kana, which has hundreds of growers filtering to a central brand. Can that panoply of growers in all their variety of growing conditions survive the gauntlet of a fairly rigorous testing process? I think that remains to be seen, but I believe the fate of the small grower rests in the success or failure of the collective strategy.”

In California cannabis, it seems readiness is a fluid concept. “Readiness means all sorts of things,” said Daniel. “There’s lab capacity, the fitness of the products as they go through the process, and there are the brands getting relationships into place with distributors who are only just now getting their act together in terms of testing. We’re all stretched for real estate, for instance. Many distributors I am speaking with tell me they have one facility here and two more pending elsewhere, but they can’t get the process going. They’re just looking for warehouse space they thought they’d have nailed down six months ago.”

Another concern is potential lack of enforcement by the state. “When we look at other states, where you had regulation without enforcement, it was a recipe for total chaos. If those situations emerge and the state is not enforcing the regulations, what you will



SC Labs' team analyzes cannabis samples.

have is massive corruption. You'll have labs with a huge incentive to falsify results to keep their clients or to reduce their cost of goods by simply not testing product and just generating results."


Washington state proved one such example. "They massively over-licensed the sector," explained Daniel. "There are about twenty-two labs for a state a fraction the size of California, and you have had no enforcement up until recently. This has allowed the percentages of THC to be massively inflated and contaminants to be under-reported. You can walk into any dispensary in the state and get 32-percent weed, which is virtually impossible to produce."

In that regard, Daniel is optimistic about California, despite what he calls its "patchwork of confusion that will slowly resolve itself over time," with "sales pushed by the winds of tax revenue. We have the pains, lumps, and bruises from these other jurisdictions, but it's going to be different in California," he said. "In other states, the industry has grown with regulations. Here, we are layering regulations on top of the largest cannabis industry in the world."

What does concern Daniel are the pinch points all labs are experiencing. "One is the longer testing cycle necessary to go

through the full set of regulations," he said. "I'm thinking about a year from now. Other agricultural industries have turnaround times right around ten business days, but in cannabis no one wants to sit on cannabis for more than 10 days. The cost of inventory per day is potentially tens of thousands of dollars, and we're sitting on that money. The best you can do is have redundancies so that if anything goes down, you are never offline [because] you're working three shifts. I do not know how a regional boutique lab is going to do it, unless we have this big ecosystem of R&D labs just doing science projects."

"We will be all right," he added, "because we are staffing up, bringing in another 150 people here. We were at about thirty-five in June, we went to about sixty by November, now we're around seventy, and by the end of the year we will be at 200 or 250 employees."

Steep Hill Labs should be more than all right, even when Big Lab comes calling. "There are other labs eyeing the marketplace, but we've been around for ten years," said Daniel. "We're the first cannabis lab in the world, we developed the original methods for analyzing this stuff, and we have the deepest well, with 500 million data points on every genetic data stream in the world. If you're a big player, you have to look at someone like us and say, 'Well, rather than steamroll you, we'd like to play together.'" 



‘LABOR PEACE’ AGREEMENTS UNLIKELY TO GIVE EMPLOYERS PEACE

BY DANIELLE MOORE, BAILEY BIFOSS, AND CHRISTOPHER CONTI OF LAW FIRM FISHER PHILLIPS

IN JANUARY, recreational cannabis use became legal in California, with the state mandating cannabis employers comply with the regulatory framework applicable to all businesses. However, as cannabis employers are quickly finding out, they are also subject to rules not generally applicable to other employers, including the requirement they institute a “labor peace agreement” in order to conduct business.

THE FRAMEWORK

The term “labor peace agreement” describes a neutrality agreement between an employer and a union, under which both sides agree to give up something in exchange for “peace.” Unions give up their right to picket, strike, or otherwise engage in conduct that interferes with business operations; employers give up their right to lock out organizing employees, run anti-union campaigns, or make negative statements to employees about the union.

Labor peace agreements typically arise when the government asserts a “proprietary interest” in a business or facility, usually as the result of providing financial assistance to a private-sector employer. The government then requires the business to sign a labor peace agreement with the union in order to protect the government’s financial interest. Although the state has not defined its proprietary interest in the cannabis industry, it may be based on the right to assess fees and taxes. An asserted proprietary interest on this basis may be subject to legal challenge in the future.



COURTS AROUND THE COUNTRY HAVE RULED CERTAIN LABOR PEACE AGREEMENTS VIOLATE THE NATIONAL LABOR RELATIONS ACT.

KEY COMPONENTS

California's rule requires any cannabis license applicant with at least twenty employees, or any applicant that plans to hire at least twenty persons, adhere to the terms of a labor peace agreement. However, the threshold may go down, particularly in California's most union-friendly municipalities. Los Angeles, for instance, already has proposed lowering the number to ten employees. Importantly, the rule applies only to licensed businesses, not growers.

The labor peace agreement must, at a minimum, require the union and its members refrain from engaging in economic action, such as picketing, work stoppages, slowdowns, boycotts, handbilling, and any other interference with the employer's business. In exchange, the employer must refrain from disrupting union organizing efforts. Departing from traditional notions of labor relations, employers also must permit access to their premises during business hours for union meetings.

Unlike many statutes, which require labor peace agreements provide for a particular method of union recognition (like a card check or secret ballot), California's rule provides labor peace agreements shall not mandate any such method of recognition.

TERMS OF FUTURE AGREEMENTS

Although California sets forth the basic standards for labor peace agreements, employers should expect unions to push for more than the bare minimum. As a result, businesses should be wary of any agreement proposed by a union representative. Agreements will vary from employer to employer and from union to union and should be vetted by an experienced labor attorney.

For example, employers should watch for proposed language that could loop in unsuspecting businesses or corporate entities that otherwise would not be covered. The requirement applies to licensed businesses only. Thus, agreements that apply to unlicensed businesses or entities owning an interest in the licensed business may be overbroad.

Additionally, the procedure for union recognition should be clearly defined. When an employer's workforce is attempting to unionize, many employers prefer secret ballot elections because it provides for anonymity in the election process. Therefore, employees are more likely to express their true feelings regarding union organization, free from undue influence or coercion. Employers should expect unions to propose recognitions by a procedure known as "card check." Under card check recognition, employees sign cards stating they wish to be represented by the union. Typically, however, election cards are distributed and collected by a union business agent or an employee who is a proponent of unionization, which may inject additional pressures on employees' decisions. Employers

should be prepared to negotiate firmly on this issue.


Employers are also encouraged to define the eligible voting unit, campaign duration prior to the election, and a post-election waiting period. Loosely drafted agreements could foreseeably result in a greater likelihood of unionization, indefinite campaigns, recognition based on stale authorization signatures, or multiple elections within a short period of time.

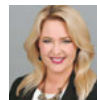
PRACTICAL EFFECT FOR EMPLOYERS

Unfortunately, if you need the cannabis license and have or plan to have at least twenty employees, you need to agree to a labor peace agreement. Practically, cannabis employees working under labor peace agreements are substantially more likely to unionize. If they do, employers can fairly expect increased overall labor costs, substantial time and expense administering the collective bargaining relationship, and decreased flexibility. Still, employers retain the right to negotiate important substantive terms of the labor peace agreement as well as any collective bargaining agreement, and should be prepared to do so.

LONG-TERM IMPACT

Although California's regulations went into effect January 1, 2018, bringing with them the requirement of labor peace agreements, hope is not lost for employers that wish to remain non-union. Courts around the country have ruled certain labor peace agreements violate the National Labor Relations Act (NLRA), the federal law governing labor-management relations in the private sector.

Nevertheless, barring a successful challenge to the labor peace requirement (which is by no means guaranteed), employers should prepare to negotiate with unions. Employers should seek counsel to evaluate what the statute requires, what is in their best interest, and how the agreement proposed by the union matches those two issues. 



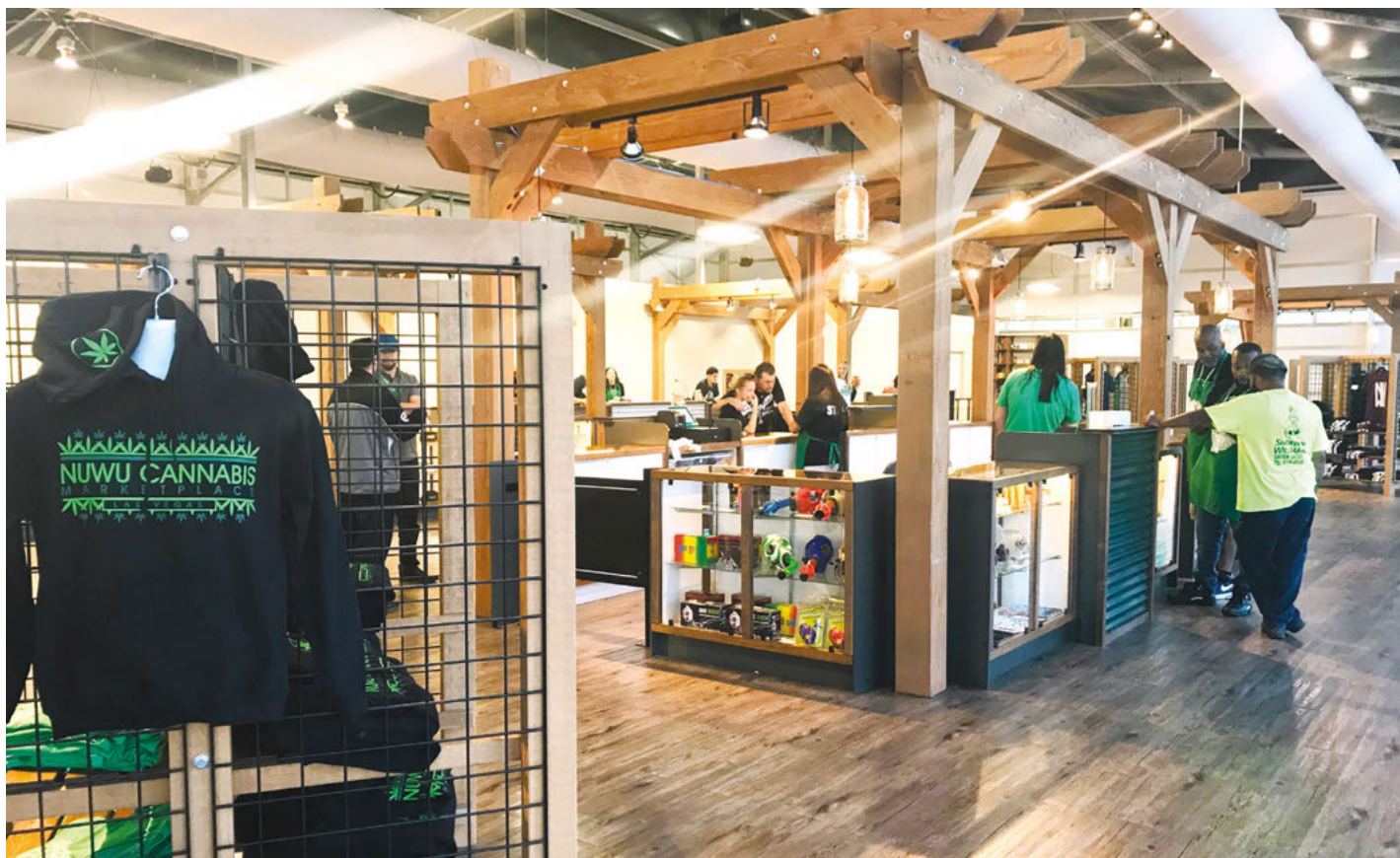
DANIELLE MOORE is a partner in the San Diego office of employment law firm Fisher Phillips. She may be reached at dmoore@fisherphillips.com.



BAILEY BIFOSS is an associate in the San Francisco office of Fisher Phillips. She may be reached at bbifoss@fisherphillips.com.



CHRISTOPHER CONTI is an associate in the Fisher Phillips San Diego office. He may be reached at cconti@fisherphillips.com. Visit FisherPhillips.com for more information.



BIGGER IS BETTER AT NUWU CANNABIS MARKETPLACE

LAS VEGAS NEVER SLEEPS, and neither does Nuwu Cannabis Marketplace. The mammoth retail store covers an impressive 15,800 square feet and is open until midnight during the week and 2 a.m. on the weekends. Nuwu also boasts the state's first 24-hour drive-through. Located on land belonging to the Paiute Tribe of Las Vegas, Nuwu ("the people" in the tribe's indigenous language) was designed to create a community around a massive marketplace made of wood and delicate lighting where people could come and go as they please without having to wait in lines. The store's open-air-market atmosphere with modern, industrial touches evokes a European outdoor bazaar. The cavernous open space also allows Nuwu to host industry events, celebrity guests, and vendor pop-ups without anyone feeling claustrophobic or disrupting the regular business flow.

General Manager Jen McClaning takes pride in making sure the store has a little bit of everything and something for everyone. "We cater to the people of Las Vegas, so if there is something we don't have in our selection, we make a note and find it," McClaning said. "We offer flower pre-packaged in grams, eighths, quarters, half-ounces, and ounces. The convenience of pre-rolls and edibles make them both popular items for guests on vacation as well as locals on the go. We have a lot of regular extract customers who keep coming back for the large selection of vape pens and raw concentrated strains."

However, it's their in-house brand, INDO, that gets most of the attention. The strain tests high for THC and always is in demand, McClaning said. CBD products also are very popular with locals and tourists. "We have a multitude of options when it comes to ingesting CBD," she said. "We have topicals, vape pens, extracts, edibles, flower testing high in CBD with little to no THC, and even CBD for pets."

Every customer at Nuwu is greeted by friendly faces and smiles. The budtenders take pride in knowing their jobs, knowing the menu, and working with shoppers. McClaning explained a job fair in September 2017 helped management find personable people with good energy who were excited to begin a career at Nuwu. "We asked the right questions to find those who had expertise and qualifications in each position we were hiring for," McClaning said. "Some came with experience from other dispensaries; others had tremendous skillsets paired with a passion for the industry. We ended up with an exceptional crew of budtenders who were able to learn and flourish with one another. Our team is now around 100 employees and growing." Fifteen to twenty employees are Nevada Paiutes, a tribe that claims just fifty-six members.

The shop's multiple inventory specialists keep the massive store stocked and ready to go for foot traffic. The budtenders are quick at taking orders, while the plethora of cashiers are efficient and friendly. After being open for just over three months, Nuwu seems to be humming along with no glitches. The stellar reviews on WeedMaps say as much. And customers love the drive-thru. The local hotel and casino workers get off work at all times of the day and night, and Nuwu's owners wanted to ensure cannabis products were available for them around the clock. "We also wanted to make things easier for our elderly customers and those with disabilities who may struggle to come inside the store," McClaning said.

Walking through the massive store, one can't help being most impressed with Nuwu's paraphernalia selection: T-shirts, books, games, glass, and many cannabis-oriented odds and ends. McClaning said accessories sales compose a large share of the shop's success. "We have some of the best prices in town for glassware and accessories," she noted. "There is no need to make a second stop for papers, grinders, pipes, bongs, vaporizers, and other accessories. We look forward to bringing more designs to our apparel line as well as carrying apparel from some of Las Vegas's favorite brands."

What does McClaning like the most about working at the world's largest cannabis dispensary?

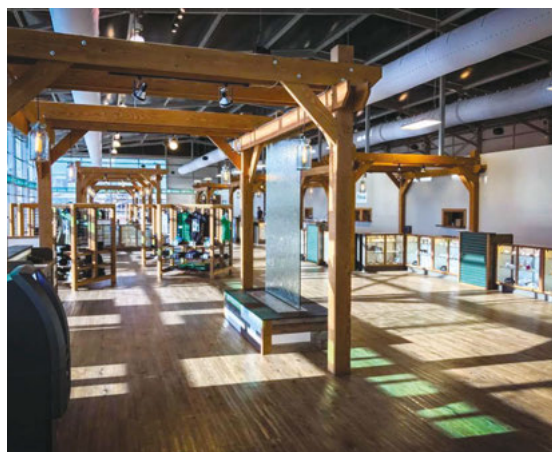
"Educating the public is a huge focus, since most of what people know about cannabis has been through propaganda," McClaning said. "The more people who become aware of the plant's healing abilities, the more people will be able to benefit from it." —Rob Hill



Left to right: Letisha Mabrou (Manager), Benny Tso (Paiute Tribe Chairman), & Jen McClaning (Manager/Marketing)



THE CAVERNOUS
OPEN SPACE
ALLOWS NUWU TO
HOST INDUSTRY
EVENTS, CELEBRITY
GUESTS, AND
VENDOR POP-
UPS WITHOUT
ANYONE FEELING
CLAUSTROPHOBIC
OR DISRUPTING
THE REGULAR
BUSINESS FLOW.





HOW TO DEAL WITH ANGRY CUSTOMERS

THE CUSTOMER IS ALWAYS RIGHT.” That may be so, but sometimes patients can try the patience of the most easygoing employee. Angry customers quickly can become a nightmare, but dealing with them needn’t be complicated or stressful. Try approaching dissatisfied visitors as an opportunity to both learn and teach. In fact, the ability to deal with angry customers makes budtenders an invaluable asset.

Empathy and problem-solving sometimes are all it takes to convert an angry patient into a customer for life, because most people respect and admire a truly caring approach. Each dissatisfied customer requires a solution specific to their circumstances, but Mookie Walden, author of *The Budtenders Bible*, offered a few suggestions for defusing confrontations before they escalate.

ACKNOWLEDGE THE PATIENT’S UNHAPPINESS

“Smile and call the patient over to speak with them further, and remind the patient this is a safe place to voice their opinions and concerns about purchases,” Walden said. It’s also a good idea to apologize. “A simple, ‘I’m so sorry. What can I do to help?’ goes a long way,” he said.

MAINTAIN EYE CONTACT

Constant eye contact is key to defusing any confrontational interaction. “Eye contact builds trust and lets the patient know you are listening,” noted Walden. “No matter how intimidating the patient may appear, you must master your fears and tame the dragon.”

LISTEN ACTIVELY

First, gently ask why the patient is unsatisfied. “Saying, ‘How can we make the situation better?’ always seems to work,” said Walden. Active listening is a powerful tool because it’s a structured form of listening and responding that focuses the attention on the speaker. Genuinely pay attention to what the speaker says, and then repeat his or her words back to them, adding your interpretation in order to ensure both of you have a clear understanding of the issues.

REMAIN CALM

Sometimes tempers flare and patients may raise their voices. Whatever else you do, stay calm. Take a deep breath and receive and acknowledge the customer’s communications. “Always remember: You are the professional,” said Walden.

NEVER ARGUE

Arguing only escalates a confrontation, so this is a big no-no. “Always remember the customer is always right, even when they are wrong,” Walden said. “Seek the support of upper management for assistance, if needed.”

DECIDE HOW MUCH BELLIGERENCE YOU’LL TOLERATE

Remember: Angry customers may also be irrational, because sometimes the real source of anger isn’t you, your company, or your products. Voices may rise, faces go red, and mean things may be said. First, give the patient a few seconds to calm down. Then, ask them to help solve the problem. If that doesn’t work and the customer becomes rude or abusive, politely ask them to leave. —Rob Hill

BOOST PROFITS BY CREATING YOUR IDEAL

GROWSPAN GREENHOUSE



FOR NEARLY 40 YEARS GROWERS SUPPLY has been supplying commercial growers with GrowSpan Greenhouse Structures, the most versatile line of cannabis greenhouses

BUILT TO LAST - GrowSpan greenhouses feature energy-efficient designs that are built to last. With durable materials and automated blackout systems, you will be producing the finest bud for years to come.

EXPERT CANNABIS CONSULTATION - We staff cannabis consultants with industry experience. They can provide valuable design advice, and their knowledge of the energy grid allows growers to increase profits by reducing energy consumption, as well as obtain energy-related rebates and financing.

IN-HOUSE FINANCING IS BACK - As low as 4.99%.



VISIT WWW.GROWSPAN.COM OR CALL 1.800.476.9715
TO FIND OUT HOW WE CAN HELP WITH ALL YOUR GROWING NEEDS





KEEPING CALM IN CHANGING TIMES

General Manager Chris Schulman on why business is booming at Grass Roots, the first San Francisco dispensary to go adult-use.

CHRIS SCHULMAN is a busy man. It's 8 a.m. and Schulman is glued to the phone. After an hour talking to vendors and placing orders, he rushes into a meeting with his staff, who have assembled on the bud room floor.

Schulman, 36, prefers to work both the opening and closing shift; he likes to see the business's patterns and what's changing or staying the same. The past few months have been especially hectic while he prepared the staff for adult-use sales, studying permitting and compliance mandates, and ensuring city requirements are met.

A former amusement park manager and real estate property manager, Schulman manages a staff of thirty. That's no easy task. "Scheduling shifts is always a challenge," he said. "Also, trying to get thirty people lined up for vacations, doctors appointments, etc., can be very time-consuming. I meet often with management and employees to ensure the shop is running smoothly. I try not to micromanage the crew, but sometimes I have to get in the weeds to ensure we are operating at maximum efficiency."

INDO EXPO

THE PREMIER CANNABIS TRADE SHOW

April 28-29, 2018

Craneway Pavilion - San Francisco, California

BUYERS PRE REGISTER NOW
FOR COMP ADMISSION

EXHIBITS • SEMINARS • DEMOS
INDUSTRIAL HEMP PAVILION
INDOOR • OUTDOOR • GREENHOUSE



Colorado • California • Oregon

INDOEXPO.COM    @INDOEXPOSHOW



A simple management philosophy guides his every move: Reward those who step up and develop those who need developing. The employees at one of the Bay Area's busiest shops are trained well and treated well. They have to be: Since California legalized adult-use, Grass Roots serves an average of more than 700 customers daily.

Schulman works a minimum of one shift per week on the salesfloor and spends time daily interacting with and thanking consumers for choosing Grass Roots. "I walk the floor often to ensure it is clean and crowd control is properly spaced, and to check in on operations," he said.

Schulman has been with Grass Roots since the beginning, and he saw firsthand how hard it was to get the shop off the ground. At launch, the budget was so small there weren't funds even for a proper counter. Grass Roots opened with a budget of \$15,000 and one pound of Big Bud on consignment. Kopp and management made the edibles themselves instead of purchasing from a manufacturer, and hash was concocted in-house. Since then, sales have grown exponentially. In fact, the shop has become a veritable cannabis emporium, offering the largest selection of cannabis products in San Francisco, according to Schulman. "The counters are now custom-designed for cannabis sales," he said.

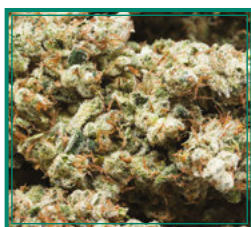
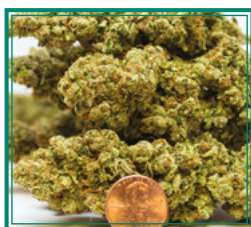
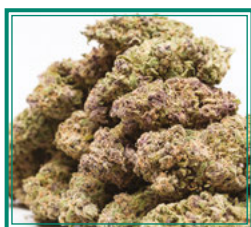
Despite the shoestring beginning, sales were brisk from the get-go. Currently, the breakdown is 35 percent flower, 25 percent vape cartridges, 20 percent edibles, and 12 percent pre-rolls.

Schulman is proud Grass Roots was the first dispensary in San Francisco to go adult-use, even though new challenges require almost daily adaptation. Skills he learned while managing myriad properties in the city come in handy,



GRASS ROOTS
FOUNDER AND CHIEF
EXECUTIVE OFFICER
CLAYTON KOPP
DESIGNED THE SHOP
TO RESEMBLE OLD
SAN FRANCISCO.
"CUSTOMERS SAY
IT FEELS LIKE A
VINTAGE SALOON."

—Chris Schulman,
general manager



he said. "Keeping our neighbors happy is a big challenge right now, as lines are queuing past their businesses and we are taking up all the parking in the neighborhood," he said.

According to Schulman, Grass Roots is seeing the best flower "we've have ever seen." However, the metrics are changing and more customers are buying cartridges and other simple, ready-to-use products including edibles and pre-rolls. In terms of flower, Kush is still king, and OG Kush and its derivatives are strong sellers, too. Schulman searched far and wide to hire a top-notch buyer. "She is a rock star," he said with a smile.

Although the store carries a stable of best-sellers, Schulman is always looking for new products and ideas. "Right now, we are giving a shot to permitted edible companies and distributors," he said. "Some of our prior vendors didn't make the transition, so we are actively seeking new partners."

Schulman's 3 Keys to Success

1 SMART STAFFING. "It's really important to know when to bulk up staff when it is busy and trim staff when it is slow," Schulman said. "Also, utilize staff during down times to perform back-of-house duties."

2 MOVED FROM DELI-STYLE TO PRE-PACKAGED PRODUCTS. "This really sped up transaction times, eliminated overweighs, and improved consistency," he said.

3 A ROBUST POS SYSTEM WITH ANALYTICS. "This can significantly enhance buying decisions," Schulman noted. "When buying, be aware of current market conditions at all times. Prices fluctuate."



SAVE MORE OF THIS




YOUR ENERGY SOLUTION

We've helped many businesses in this industry overcome their critical electricity issues. How can we help yours? Contact us today.

1-844-885-9301 • info@MBS.engineering

IN THE WEEDS

Grass Roots sits between one of the most disadvantaged neighborhoods in town and one of the most affluent. The clientele represents the diversity of San Francisco's population: all ages, races, and sexual orientations. Grass Roots supports local community organizations; the vast majority of the shop's charitable donations go to projects within a ten-block radius. Support for veterans organizations is a passion, and Grass Roots participates in gun buyback programs. Most recently, the shop supported the City of San Francisco's Equity Program, which provides opportunities in the cannabis industry for persons from disadvantaged backgrounds.

Schulman often tells a story about the impact Grass Roots has had on the neighborhood. "Before I worked for Grass Roots, I was helping coordinate an LGBT audio history event on Polk Street," he said. "The day before our event, we were told by the owner of the space that we needed insurance. With no notice, Grass Roots donated the full amount for the insurance and connected [the organization] with [Grass Roots's] insurance broker. That is the type of community-minded spirit this organization embodies."  —Rob Hill



NEED A
CUSTOM TRADE
SHOW BOOTH?

D T P
DAVID TORRES
PRODUCTIONS



Booth Design & Fabrication

Lightweight Booth Systems

Booth Rentals

Large Format Graphics

Booth Set-Up and Dismantle



Show Service Management

Audio/Video Production

Theatrical Lighting

Promotional Handouts

Special Event Design & Production

davidtorres.com | (805) 285-0815

FRESHER IN THE CAN.

PATENTED NITROGEN PACKAGING



PREVENTS OXIDATION

REUSABLE & 100% RECYCLABLE

BRANDABLE & COMPLIANT

AIR-TIGHT & ODORLESS

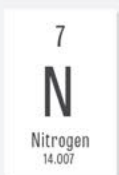


CHILD-RESISTANT LID AVAILABLE

FITS DISCREETLY IN A PURSE OR POCKET

INHIBITS MOLD, BACTERIA & MICROORGANISMS

SELL 100% OF WHAT YOU PACKAGE



WHY NITROGEN?

Nitrogen keeps flowers fresh by preventing oxidation – the degradation that occurs when perishable products are exposed to oxygen. Replacing harmful oxygen with protective nitrogen when packaged ensures your flowers stay fresher longer. Don't worry, there's nothing unsafe about it. Nitrogen is an inert gas that's widely used in organic food and beverage packaging because it's clean, safe, and environmentally friendly.

Clear can coming soon.



INFO > N2PACK.COM

HARD GOODS



1

PIECE PIPE

This modern, stylish, and ultra-compact pipe disguised as a chic key ring is the ultimate stealth smoker. Swedish-made of high-quality brass, the Piece Pipe easily attaches to keys or a bag. The patented pipe has a stash compartment, stays cool to the touch, and is odorless when closed.

ORIGINALPIECEPIPE.COM

2

THE APOTHECARY CASE

Keeps flower fresh, organized, and secure without sacrificing style. The airtight case is separated into two sections to prevent odor cross-contamination. One side holds strains, dabs, and oil canisters; the other holds grinder, tools, papers, pipes, and vaporizers.

THEAPOTHECARYCASE.COM



3

POPPINS STASH BAG

Like Mary Poppins's bag of treats, the Poppins Stash Bag discreetly carries tasty cargo. Child-proof, with a three-digit, keyed lock and waterproof zipper. Made in Italy, the exterior is genuine leather lined with faux leather for easy cleaning. Available in black, cobalt blue, white, and camel.

VANDERPOP.COM

4

MINI ZONG WATER PIPE

The original no-spill, kinky glass water pipe now comes in a miniature size. Colors include clear, black, green, blue, pink, purple, and amber with silver or gold fuming. Pipes measure 25mm x 5mm and are handmade in the U.S.A. In bubble or beaker bottom styles.

ZONGGLASS.COM



5

HIGH TEA HERBAL WRAPS

Self-sticking, easy-to-use wraps offer flavor and a satisfying smoke. Crafted from mate teas blended with rich hemp and cacao for strength and texture, the blunt wraps come in resealable packs of five. In Mad Melon, Mango Dream, Juicy Grape, and Royal Sweet flavors.

PHILLIPSANDKING.COM





www.storz-bickel.com

FILLING SET

Fill up to 40 Dosing Capsules at once.



THE SET INCLUDES

- Filling Device
- Plunger
- Herb Mill XL
- Magazine (incl. 8 Capsules)
- Digital Scale
- Dosing Capsules (40 Pcs.)



STORZ & BICKEL AMERICA INC.
Oakland • CA 94608 • USA
www.storz-bickel.com

Contact
☎ 1-866-380-6278 ext. 405
✉ america@storz-bickel.com

HORTICULTURE & GROWING

1

PURPLE MAXX

Purple Maxx will force color development in susceptible strains so there's no need to delay harvesting, which can cause brown rot inside the flowers. Also stimulates crystal, resin, and fragrance develop in all strains. The product also may be used during flush.

HUMBOLDCOUNTYSOWN.COM



2

BOTANICARE POWER CLONER

Botanica's Power Cloner uses aeroponic methods to encourage easy rooting of cuttings and clones. Place almost any type of plant cuttings in the Power Cloner and watch prolific roots develop in as few as five to ten days.

BOTANICARE.COM

3

AGRIAIR 2200 PG AIR PURIFIER

Designed for highly sensitive environments at risk of bio-contamination such as cannabis drying, trimming, and packaging areas. Contains a medical-grade HEPA filter and two photo-hydro-ionization generators that eliminate even submicron particulates in the air and prevent microbial contamination.

AGRIAREQUIPMENT.COM



4

KOOLBLOOM

Plant supplement improves crop production and increases the weight of yields. Used early, Liquid KoolBloom continually builds up flower production. Dry KoolBloom is used late in the bloom phase to increase weight and yield. It also encourages rapid ripening.

GENERALHYDROPONICS.COM



5

VERMI PRO SOILLESS GROWING MEDIUM

This soilless growing medium has extremely high porosity, which allows for aggressive feedings. Highly experienced growers designed the ratios of triple-washed coco coir, high-grade peat moss, sustainably harvested and aged softwood bark, #3 Perlite, and Mycorrhizal fungi.

VERMICROP.COM





Should have used **mills**

*For the premium, fast paced,
agriculture market*

Only 6 bottles from seed to harvest
Natural / Mineral blend
Easy to use
Commercial sizes available

562-343-5412 | #millspaysthebills | info@millsnutrients.com

PSYCHOACTIVE



1

BLOOMFIELD VAPE KIT

Bloomfield's compact, discreet vape kit keeps a selection of four pens in one place, protected and charged. Just plug the kit in to charge all pens at once. Each kit contains one sativa, one hybrid, one indica, and one CBD blend.

BLOOMFIELDCO.COM

2

HIMALAYA CONCENTRATES

C02-extracted concentrates are vapor-distilled three times, removing contaminants, tar, and wax, for super-clean cannabinoid and terpene formulations. Himalaya's oils are then triple lab-tested for purity. Flower for extraction sourced from small Sierra Nevada family farms. "Bring the fire – Keep weed real – Don't be jerks."

HIMALAYAVAPOR.COM



3

EAST FORK CULTIVARS ALL-FLOWER PRE-ROLLS

Premium, all-flower pre-rolls in three categories: Relax, for relaxation and euphoria, with high CBD and a touch of THC; Balanced, to relieve tension and stress, with high CBD and moderate THC levels; and Create, for energy and inspiration, with balanced high-CBD/THC blend.

EASTFORKCULTIVARS.COM



4

AKANA WESTING MEDICATED ALMOND BUTTER

High in protein, vitamin E, and micronutrients from locally sourced ingredients infused with cannabis, cinnamon, raw honey, and fine sea salt. Each 4oz jar contains 100mg of THC; 1oz GO-Packs containing 25mg of THC offer maximum convenience.

AKANAWESTING.COM

5

PEARL20 MINI

This water-based cannabis emulsion offers the ability to consume cannabis in favorite foods or drinks with zero calories, zero fat, zero sugar, and zero cannabis taste or smell. The product doesn't lose potency when cooked, chilled or frozen. Available in one-, five-, or ten-serving packs.

PEARL20.COM



a better adventure

NEW!

Cleaner. Gentler. Better.

Better begins with our commitment to virtuous ingredients and deep-rooted respect for the cannabis plant. incredible Wellness sources and tests high-grade THC and CBD to infuse everyday products for ease of use and ultimate dosage control. Now doesn't that sound much better?

Tincture • Suppository • Vape • Bath Salt

Learn more at iloveincredibles.com



a better experience
**incredible
wellness**



NON PSYCHOACTIVE

1

HONEY'S HEALING CBD HEALING TINCTURE

An Emerald Cup second-place award winner. High in antioxidants, polyphenols, flavonoids, and terpenes, the manufacturer recommends this tincture for relaxation and pain management. High CBD OG Kush formulation offers optimum ratio of cannabinoids to maximize healing benefits.

HONEYSHHEALING.COM



2

RAW CANNABIS PAIN STICK

Pocket-sized stick treats medical conditions like arthritis, eczema, joint pain, and more. Made from an award-winning formula, the stick is a convenient way to apply a topical product on the go. Non-psychoactive, with a 1:1 ratio of CBD to THCA offers relief without slowing you down.

AWAKENEDTOPICALS.COM

3

CBD RECOVERY SUPPLEMENT

A "Health+Fit" supplement by HiFi Supplements, Recovery contains U.S.-grown cannabidiol and branch chain amino acids (BCAA) in a first-of-its-kind formulation. The product is intended to support active lifestyles, ease chronic pain, and increase the sensation of overall wellbeing. Natural fruit flavors and sugars.

HIFISUPPLEMENTS.COM



4

SWIFT SUBLINGUAL SPRAY

Using Provisions' Gravatine™ process, this CBD sublingual enters the bloodstream faster and more efficiently than an edible or tincture. The result: sooth and clear serenity in a matter of minutes. Discreet and convenient. 400mg CBD per bottle.

MIRTHPROVISIONS.COM



5

HONEY GOLD CBD OIL SYRINGE

Purified raw cannabinoids are collected via supercritical CO2 extraction and double-distilled to eliminate as much of chlorophyll and plant matter as possible. Then, the product is infused with a rich terpene blend to create oils that please children's taste buds. The syringe allows exact, consistent dosing.

CANNAKIDS.ORG



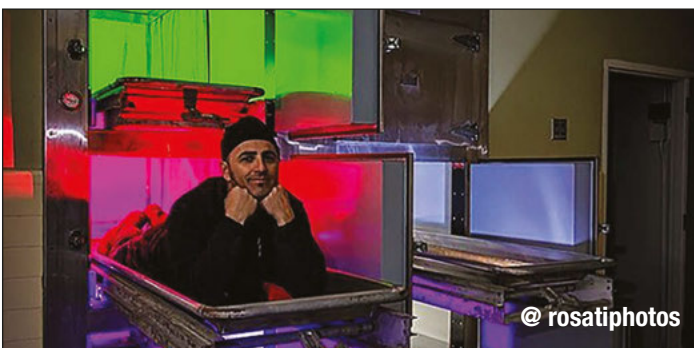


 **CORPORATE STRATEGIES, INC.**TM
INSURANCE • EMPLOYEE BENEFITS • HR • PAYROLL

800-914-3564

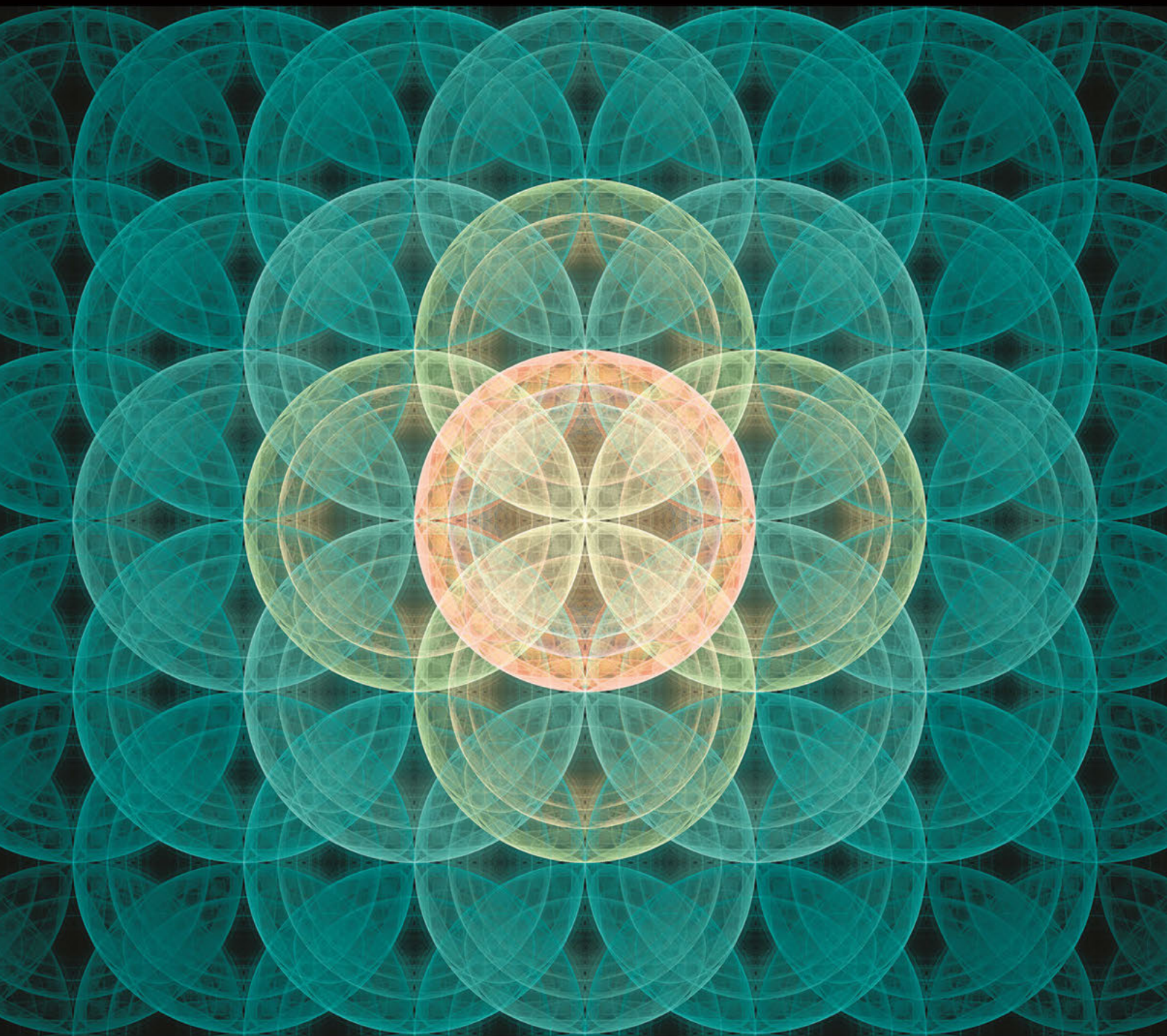
www.CorpStrat.com

| HASHTAG |




Interested in having your account featured? Follow @mgretailer and tag #mgmoment.

*What's your **BRAND** strategy?*



M|8

Madison8.com

 madison8agency

#powertotheflower



BRITTNY PELOQUIN,

MARKETING MANAGER FOR PHILLIPS & KING INTERNATIONAL INC., RECOMMENDS....

EDIBLES

I'm obsessed with Breez Mints and Petra Mints by KIVA (KIVAConfections.com). When I discovered micro-dosing, my whole consumption routine changed. I have to have my Breez THC+CBD cinnamon mints on hand at all times. Petra Mints are the ultra micro-dose—2.5 milligrams—which is perfect for anyone who wants to just dip a toe into trying cannabis.

VAPE

I really like the Alpine (AlpineVapor.com) flavored vapes. Also, Select Oil's Social line (SelectOil.com) nails the mellow high that I'm looking for on a regular basis. I always know what I'm in for with Select. I also like to keep my O.penVAPE (OpenVAPE.com) CBD vape on hand for when anxiety gets the best of me or if I've had a little too much THC.

CBD

Cannadips (Cannadips.com) blow my mind. It's a small pouch that you put in your mouth, and the CBD is able to take effect a lot quicker than with edibles. Apothecanna's Calming CBD Body Creme (apothecanna.com) is magic. I carry a lot of tension in my neck, so I put it on most nights before bed. I like to run as a hobby,

and it's also effective for muscle soreness that I get from training for a big race.

FLOWER

I like pre-rolls, because they are a lot more convenient for me than traditional loose flower. Lola Lola (LolaLola.com) and Lowell Herb (LowellSmokes.com) both have beautiful branding and great-quality flower."

BRAND

I really love KushQueen's (KushQueenCannabis.com) bath bombs and Lit Kits. They make little kits of small doses of products like joints, a bath bomb, an edible, etc. It's sort of like a sample pack that makes for a great gift or treating yourself to something special for the ultimate relaxation. 🌿—Rob Hill

PHILLIPS & KING is known as the one-stop for smoke shops. As the industry shifts and more stores stock accessories for cannabis users, Phillips & King is answering the needs of customers by expanding the company's selection to include a wider variety of ancillary products for the market. PHILLIPSANDKING.COM

YOUR LAB NOW HAS
THE OPTION OF
**UL/CSA ROTARY
EVAPORATORS
AT A FRACTION
OF THE COST!**

 **ACROSS**
INTERNATIONAL
Material Processing Equipment

AiVacuum.com 888-908-0228



grow world-class cannabis, you need world-class nutrients.

...ites, Grand Master Grower and
...or of the world-famous medical
...na strain **Grand Daddy Purp**,
...is faith in Advanced Nutrients
...igger, more potent yields.

Advanced Nutrients

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



AdvancedNutrients.com