

The 5 Biggest Days of the Year for Retail Cannabis Sales

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Insights for cannabis executives, investors & entrepreneurs

VOL 4 • ISSUE 7 • August 2017

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tips from experts in the field



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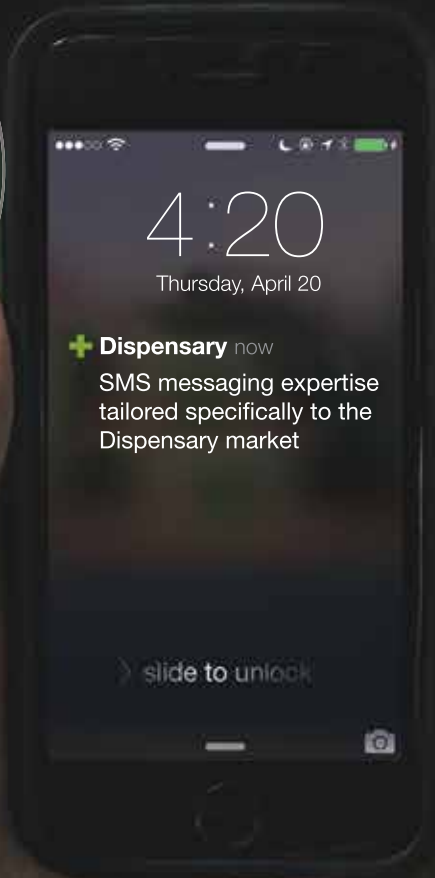
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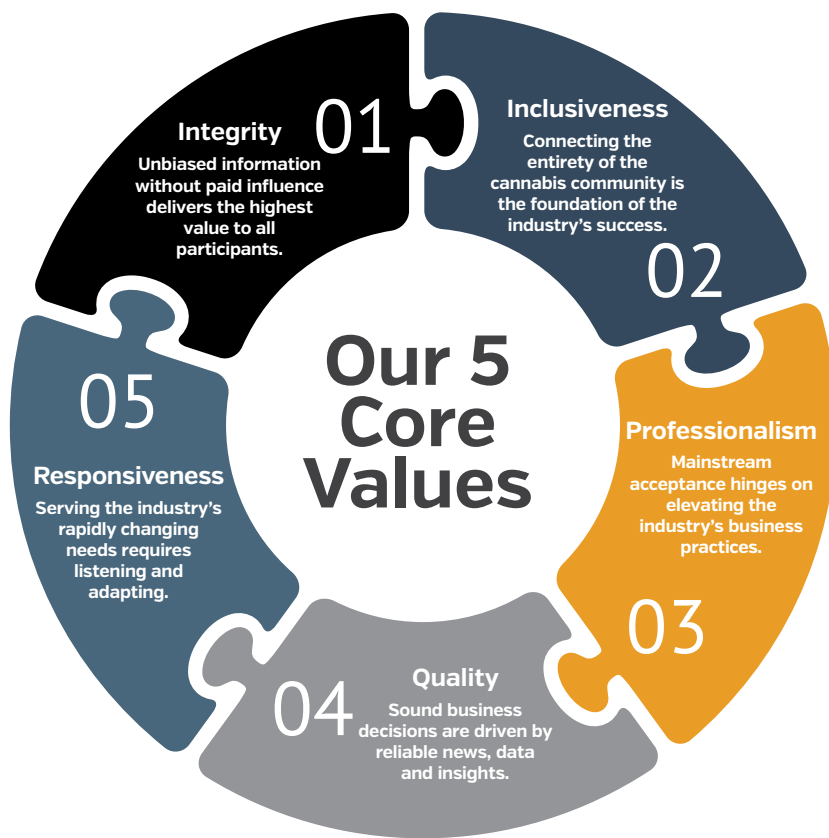
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## Who's Behind This Magazine?



Founded in early 2011, *Marijuana Business Daily*™ focuses solely on cannabis businesses and the investors who back them.

If you are leading or financing a cannabis-related company, we help you prosper via trusted information services and exceptional events.

Our publications have the highest business readership in the industry. Our events are sellouts, year after year after year. And, we've been cited everywhere from *Harvard Business Review* and the *Wall Street Journal* to *Forbes*, *Fortune* and *Fast Company*.

Do you need practical information, real-life data or industry connections to help your business grow? You'll find what you need in one of our publications or at our national events.

We are here to help the multibillion-dollar cannabis industry prosper. Let us know how we can serve you.

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COVER PHOTO by Lezlie Sterling



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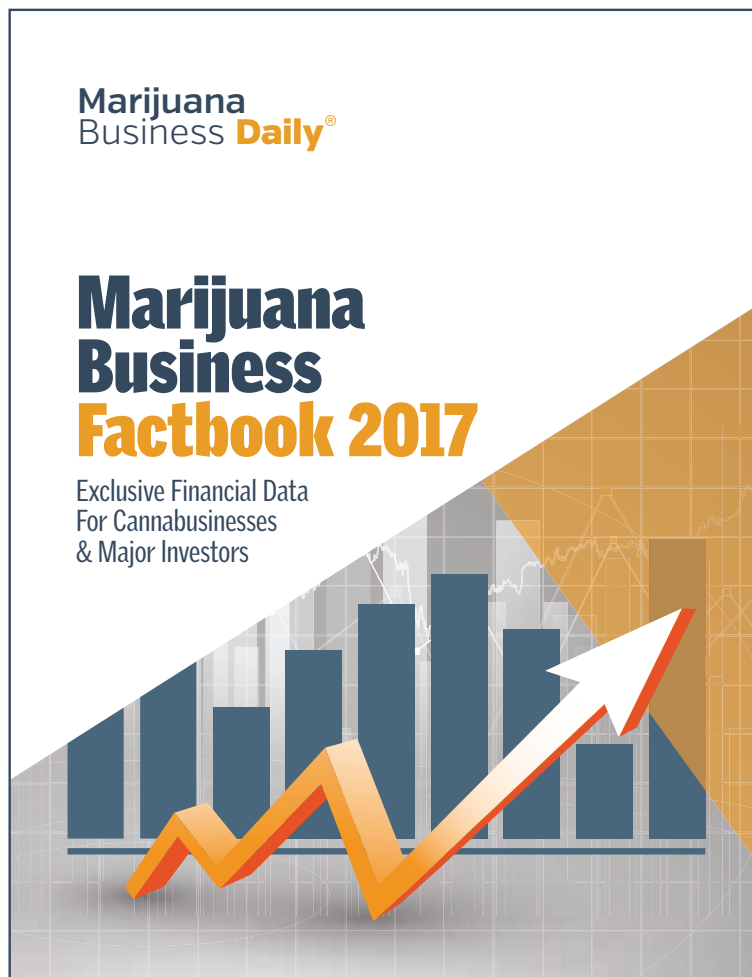
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# The Unexpected Path



**R**ecently my co-founder and I presented the keynote for the Specialty Information Products Association's annual gathering of niche business news, information and events executives. The subject of our talk: "The Unexpected Path to Profits."

That experience – and the work to develop the talk – got me thinking about how both life and business have brought us to a unique leadership role in the cannabis space. By this I'm referring to the leadership demonstrated by the MJBizDaily brand in providing the most trusted source of industry news across the continent, as well as my own leadership position within the company.

From the very beginning our goal has always been to help you do your job to the best of your ability and run your business or fulfill your role more effectively. I apply that goal when I work with each and every one of my staff, and it drives everything the team does each day to deliver to you the valuable business insights you need to achieve whatever goals you've set.

That's not to say there have not been unexpected twists and turns along the way.

I've been pushed to stretch beyond my comfort zones. I've been through a ton of uncomfortable experience-based training moments but have grown to love a role I never even knew I wanted in the first place. Like each of you, I've received my fair share of lessons learned through the school of hard knocks along the way.

It's important to remember that the vast majority of professionals in this industry have had unexpected paths into the cannabis space. After all, this industry did not even exist in its current form a decade ago.

Rest assured that the MJBizDaily team gets where you're coming from and will continue to provide the daily news, monthly magazine insights, annual business and financial data reports, and the critical thought leadership of the MJBizCon events to help you navigate your own unexpected paths.

All the best,  
Cassandra Farrington  
President & CEO

A handwritten signature in blue ink that reads "Cassandra".



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# 5 Biggest Days for Cannabis Retailers in 2016

**W**hat was the largest single day for retail cannabis sales last year? April 20, of course.

According to data provided by MJ Freeway, a Denver-based seed-to-sale software provider, dispensaries and recreational marijuana stores across the country saw business nearly double on 4/20 last year over an average day. They also see an influx of customers

leading up to major holidays like Thanksgiving and the Fourth of July. Fueled by rising mainstream acceptance of marijuana use, spikes in retail cannabis sales now echo that of more traditional libations like beer or wine.

With that in mind, here's a look at the five biggest days for retail cannabis sales in 2016:

**1****April 20**Average daily sales per retail location: **\$24,142**Increase over a typical day: **97%****2****Dec. 31 (New Year's Eve)**Average daily sales per retail location: **\$22,878**Increase over typical day: **87%****3****July 1 (Friday before Fourth of July)**Average daily sales per retail location: **\$21,116**Increase over typical day: **72%****4****Sept. 2 (Friday before Labor Day)**Average daily sales per retail location: **\$21,077**Increase over typical day: **71%****5****Nov. 23 (Day before Thanksgiving)**Average daily sales per retail location: **\$20,258**Increase over typical day: **65%**

Source: MJ Freeway



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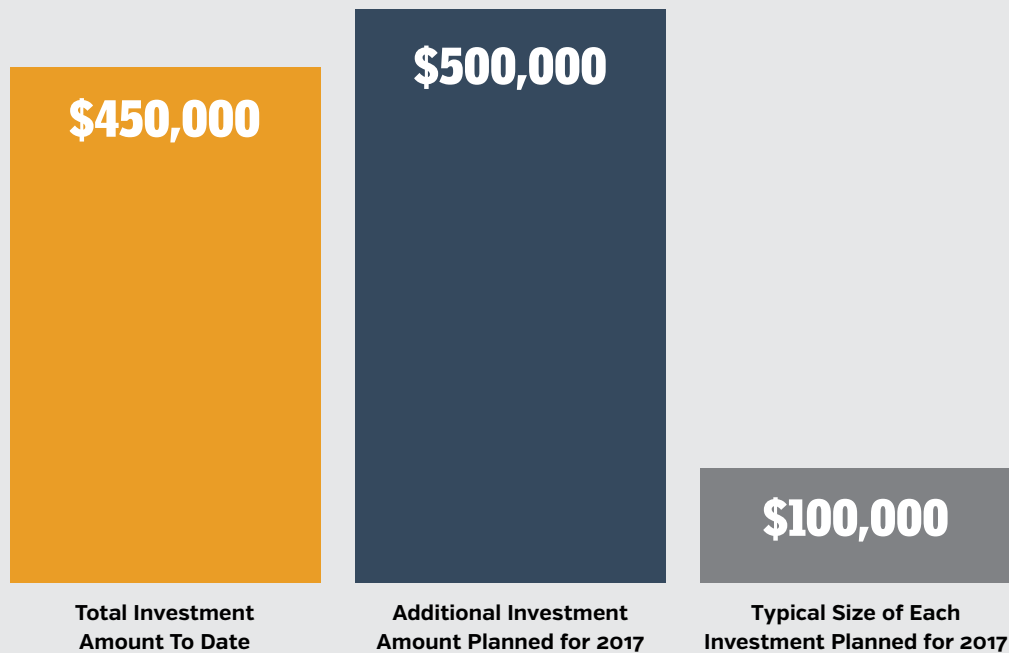
# Cannabis Industry Investor Activity in 2017

**M**any anticipated that the election of Donald Trump as president – and his subsequent selections of anti-marijuana cabinet members – would dampen investment activity in the cannabis industry. But so far, investors have been undeterred.

According to survey data in the recently released Marijuana Business Factbook 2017, investors are ready to provide more capital to cannabis companies this year than in all previous years combined. This is another indicator that the funding dam is starting to crack, with more money flowing into cannabis companies as the industry matures and investors become more comfortable taking on risk to pursue large returns.

Here's a look at planned investment activity among cannabis industry investors for 2017:

## Cannabis Industry Investors: Typical Investment Amount To Date, Additional Investment Amount Planned For 2017 & Size Of Each Investment



Source: Marijuana Business Factbook 2017  
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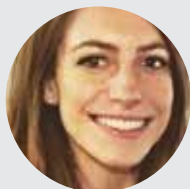
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## MY FAVORITE THINGS

Each month we survey a group of executives in a specific sector of the marijuana industry, asking them to name a favorite item – such as a trimmer, extraction technology or point-of-sale software. We welcome your suggestions for topics. Email us at [editorial@mjbizdaily.com](mailto:editorial@mjbizdaily.com).

This month we've asked six executives to share their favorite work- or business-related software application:



**FRANCESCA PICCIRILLO** *Account Manager, Cannasure Insurance Services*

**Cleveland | Pick: Simplifya software compliance app**

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**TIM KEOGH** *CEO, AmeriCann*

**Denver | Pick: Taskary**

Taskary helps manage and create my task lists and calendars, and it syncs with all my Google accounts. There are a lot of moving parts at AmeriCann, including real estate developments in multiple states, business opportunities in new states and the responsibilities of running a public company. Having one app to help keep track of it all saves me a lot of time.



**SAGE PETERSON** *CEO, Canuvo*

**Biddeford, Maine | Pick: Suti**

Suti gives us one platform to manage onboarding; performance review; keep certificates; paid time off manager; and the time clock. We also can share info corporatewide by uploading documents and keeping the corporate calendar.



**KEEGAN PETERSON** *CEO, Wurk*

**Denver | Pick: MindMeister**

It allows you to build a map of your whole organization and keep track of different projects and tasks that you have within each department. And it allows you to share it with your team so the whole team can update it. It's the center point of all our executive meetings, so it allows all to stay on top of what everyone's working on. Once you're done with something, you can check it off so it becomes like a task-management solution as well.



**BECKY DEKEUSTER** *CEO, Calyx Concepts*

**Sidney, Maine | Pick: CamScanner**

CamScanner takes the hassle out of tracking and invoicing expense receipts. It has an intuitive interface that's easy to learn, even for those who are not so tech savvy. Quite robust for a free app, CS lets you save time – instead of saving dozens of little slips of paper. Highly recommended!



**JULIE BERLINER** *Founder and CEO, Sweet Grass Kitchen*

**Denver | Pick: Wunderlist**

I keep all my lists in one place, from agendas to categorized task lists to food shopping. It can alphabetize, prioritize, set dates and reminders, and it has sharing options if you need to assign tasks to someone else. I love it and couldn't live without it.



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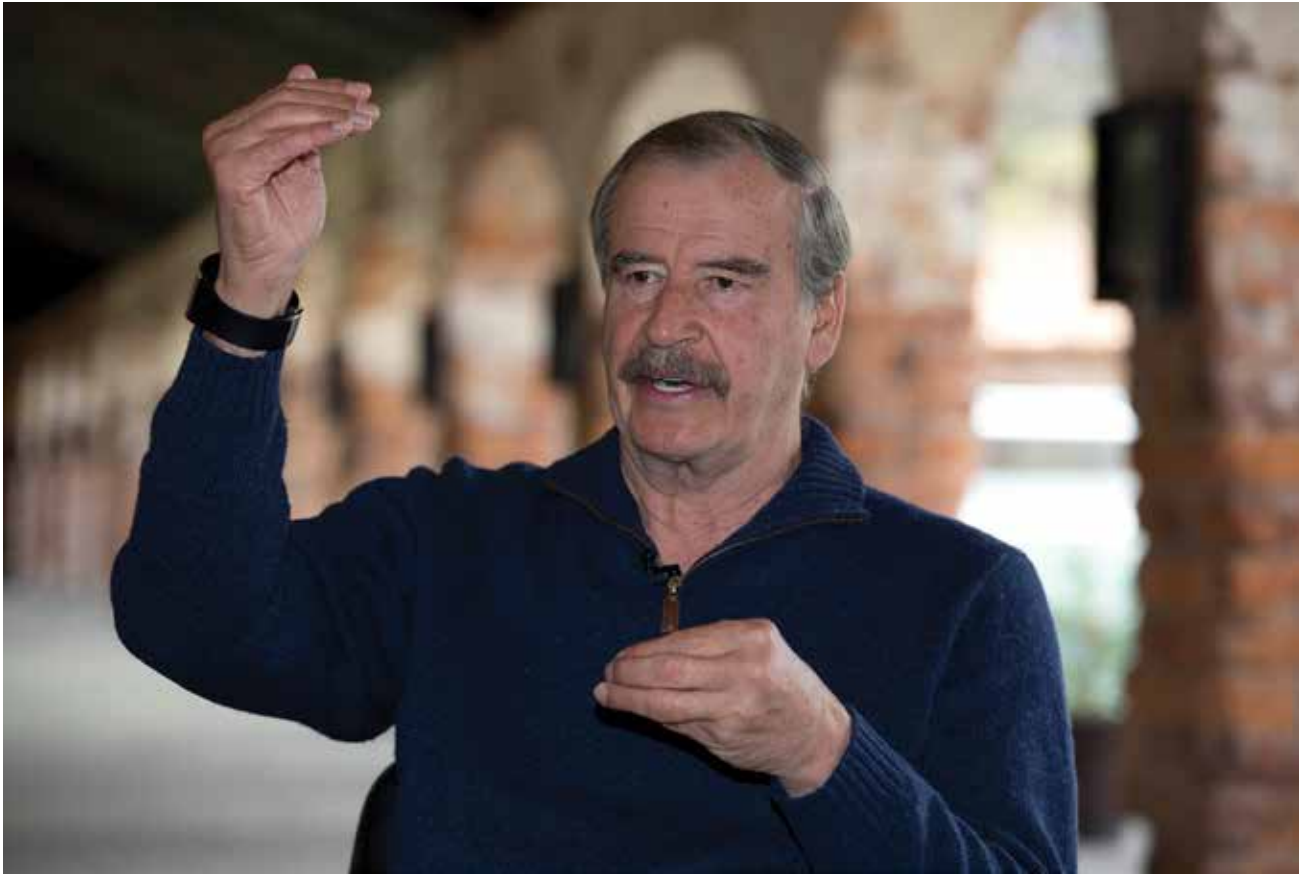
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# An International View of Marijuana

## Five Questions with Vicente Fox, Former President of Mexico

by John Schroyer

**V**icente Fox served as commander-in-chief of Mexico from 2000 to 2006, but now the 74-year-old ex-president is spending some of his golden years stumping on the international stage for marijuana legalization in both his home country and elsewhere.

During a news conference with the media – including Marijuana Business Magazine – before a National Cannabis Industry Association conference in June, Fox hailed Mexico's recent moves to legalize medical marijuana at the national level. However, he said there are many more reforms that should be enacted globally, such as inserting cannabis into international trade agreements.

Following are his answers to some of the questions asked during the news conference, edited for length and clarity.

### What's your stance on cannabis legalization?

I've been around this issue for a long time, with the idea of promoting legalization, not only for one so-called "drug," cannabis, but for all drugs. That's my position. I think it's not the right of governments to intervene in citizens' personal behavior or personal beliefs. I don't think prohibition has worked, and we have paid a huge price for that. We're paying



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# “Cannabis legalization has the capacity to create jobs in Mexico, to stop the killings in Mexico.”

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the price of losing our youth, by the tens of thousands, hundreds of thousands.

I think the cannabis industry ... is a great big responsibility for all participants, whether it be farmers, processors, traders and promoters of this newly born industry. It's a sensible industry. It's an industry that requires ethical behavior. It's an industry that requires responsibility from all its participants so that it grows and flourishes.

It's an industry that should not be dealt with by the attorney general's office. It should now be in the hands of health authorities, because in the end, it has to do with public health. The proof is that all those that took this step forward (already), like Holland, like Portugal, they are doing extremely well. They did eradicate crime. They did eradicate the underground economy. They did bring in regulations that have brought in income and taxes to governments.

## **It was recently revealed that U.S. Attorney General Jeff Sessions may want to prosecute marijuana businesses. What do you think about that?**

That he is crazy. That he doesn't know about history. That he doesn't know what we have built with such a big effort.

Humankind is moving along, taking decisions to build a better world. I don't know what happens with the Trump administration, but they're totally blind. And it's not fair that a guy which only has (roughly 38%) support of people determines and imposes either executive orders or other ways and means upon people. We're going to stand firm against what's going on, because it's not only the fate of the United States, it's the fate of the whole world.

## **What would it mean for Mexico if the United States were to legalize marijuana? What's the impact to Mexico?**

We are partners, United States, Mexico and Canada – we are solid partners through NAFTA. Today, most Fortune 500 corporations are what I call NAFTA corporations. They nourish themselves with the competitiveness of each of the three nations and the three economies. You cannot separate that, because you will pay a huge price in cost. You will lose competitiveness. We will lose being the No. 1 region of economic power in the world.

All of this has to do with cannabis. Now, this newly born industry is already larger in jobs, larger in sales,

than many other economic sectors and many other industries. And it's just the beginning. Cannabis legalization has the capacity to create jobs in Mexico, to stop the killings in Mexico.

Now we're going to have farmers. Now we're going to have processors. Now we're going to prove the quality of cannabis in Mexico. Now we're going to be an exporting economy, and that will be, and it should be, one of the areas to negotiate in NAFTA. This product should be included in NAFTA. No trade barriers, no taxes. That's what we should do, and I'm sure that's what we're going to do.

Imagine the border between San Diego and Tijuana, where one side is already legalized and the other one does not, which would be Mexico. It would be crazy, that border. That's the same conflict you have here in the states.

## **Are you speaking of the fact that the United States is between two nations that will now have federally legal cannabis, Canada and Mexico?**

Right now we're basically equal in regulation, the three nations ... so now we're on common ground to develop this industry. Unfortunately, in the United States, the federal law is still very restrictive. It criminalizes drugs. You have close to 3 million people in jail because they exercised their own free will and free responsibility. It's incredible.

## **How do you see the international cannabis industry changing or evolving over the next few years?**

Today's situation of prohibition and criminalization has created international organizations, international cartels that don't respect borders, don't respect law, don't respect nothing.

Look at the price we're paying in Mexico. With (former Mexican President Felipe) Calderon's administration, it went up to 160,000 kids killed in the streets. And the same thing is happening in Central America and of course in Colombia. They have to move from prohibition to legalization. Otherwise there will be this underground market where the only thing that it provokes is increased prices of the drug and crimes.

Today, fortunately, in Colorado, in Washington, now it's in the hands of (state) government, through taxation, and it's a totally different story. International situations, global situations will follow national decisions. ♦



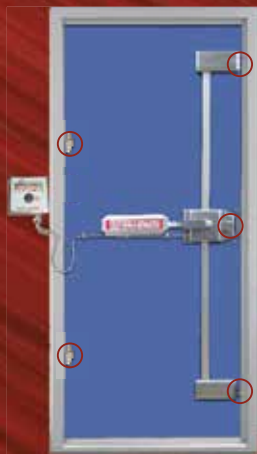


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# What's Happening:

## National and International News



### Report: U.S. Cannabis Industry Employs 165,000-Plus Workers

The U.S. cannabis industry has quickly become a major job generator, employing 165,000-230,000 full- and part-time workers, according to estimates in the newly released Marijuana Business Factbook 2017.

Cannabis-related businesses now employ more people than there are dental hygienists and bakers in the United States and will soon surpass the number of telemarketers and pharmacists. The estimates include employment data for retailers, wholesale grows, infused products/concentrates companies, testing labs and ancillary firms.

### AG Sessions to Congress: Kill Medical Marijuana Protections

U.S. Attorney General Jeff Sessions asked four congressional leaders to omit key medical marijuana industry protections from a new federal spending bill.

Although the attempt was unsuccessful, the letter – first reported by cannabis-focused social media platform Mass-Roots – underscores that marijuana businesses are not yet totally safe from possible federal intervention.

Sessions specifically asked that language from the Rohrabacher-Farr Amendment not be included in any appropriations bill or similar provisions that would “in any way inhibit the [Department of Justice’s] authority to enforce the Controlled Substances Act.”

### Canada Streamlines Medical Marijuana Licensing Process

Health Canada implemented new rules intended to streamline the licensing process for medical marijuana producers, a move aimed at boosting the overall output of MMJ and the number of legal cultivators.

The changes are likely to speed the process for licensing MMJ producers and shrink the backlog of hundreds of outstanding applicants.

Key changes in the licensing process include devoting more personnel and other resources to application reviews, allowing staffers to examine some application sections concurrently and extending the length of the licenses.

Also, licensed producers will be allowed to boost output within their existing facilities to the maximum amount they are authorized to store.



**U.S. Attorney General Jeff Sessions tried to quash medical cannabis protections.**





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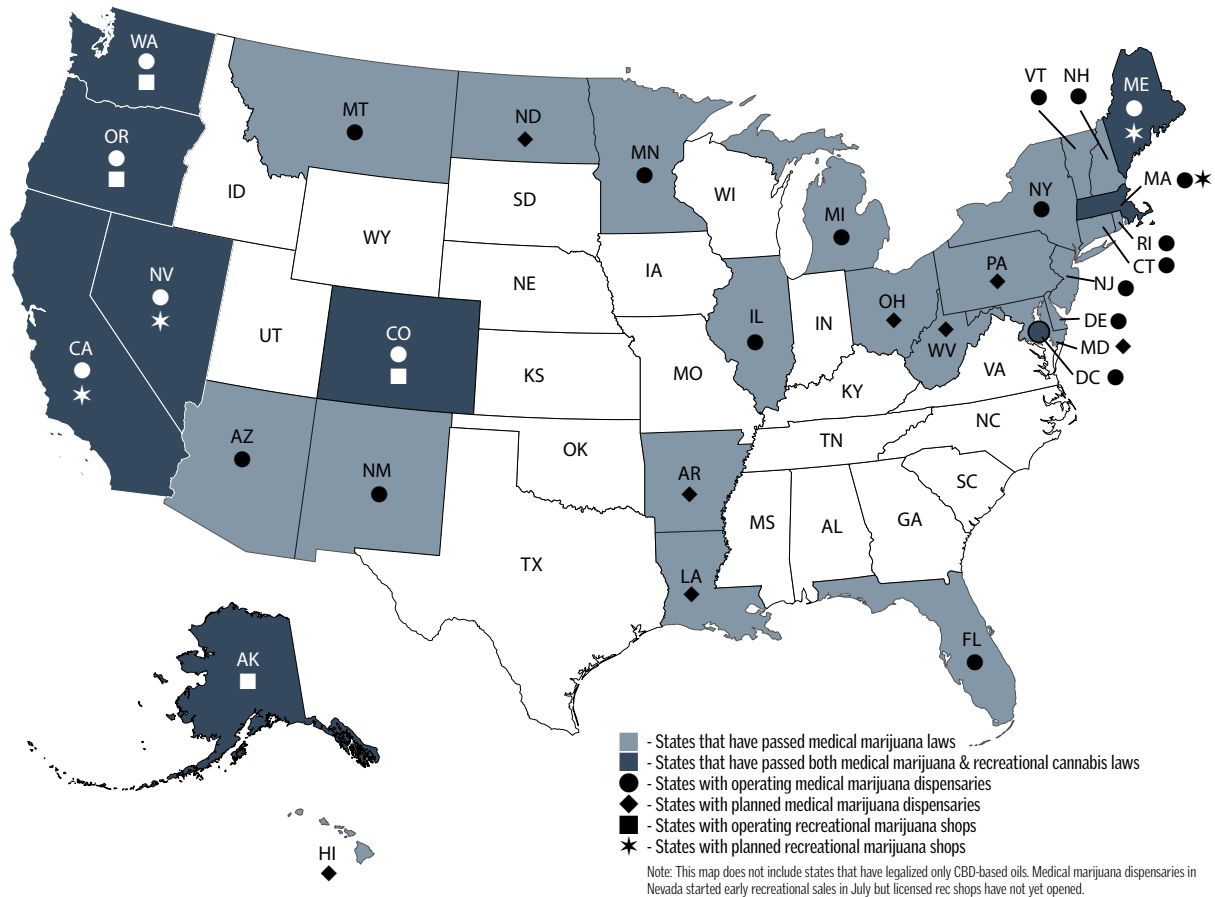
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# State News Developments



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Data is current as of 7/7/2017



## Arkansas

Applications are now available for those who want to start medical marijuana businesses in the state. The Medical Marijuana Commission has posted the applications for licenses to operate MMJ cultivation facilities and dispensaries. Applications are expected to be accepted until Sept. 18. The commission has said it will issue 32 licenses for dispensaries and five for cultivation facilities.



## California

The legislature approved a state budget plan that includes a proposal from Gov. Jerry Brown to merge the regulatory systems for both medical and recreational marijuana businesses. The implications of the move are enormous for cannabis companies. But from the simplest viewpoint, the biggest impact is that the new system will allow California marijuana retailers to sell both rec and medical at the same physical storefront.



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## Colorado

Nearly all the businesses that had expressed interest in taking advantage of a voter-approved initiative to allow onsite cannabis consumption in Denver say the initial regulations governing the issue are too burdensome. And that means the city's social-use plan may be for naught. One of the campaign directors for Denver's Initiative 300 said that "99%" of businesses that considered applying for a social-use license are "no longer interested" because the rules would be too difficult to comply with.



## Connecticut

The state's medical marijuana dispensaries could see a boost in patient counts in the next year after the Department of Consumer Protection agreed to make three more conditions eligible for MMJ treatment. The DCP commissioner notified the Board of Physicians she will follow the panel's recommendation to add hydrocephalus (water on the brain) with intractable headache; intractable migraines; and trigeminal neuralgia (chronic pain in the nerve that carries sensation from a person's face to the brain). The decision applies only to adult patients.



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## Florida

During a special session, the two chambers of the legislature reached a deal on medical marijuana and passed a compromise bill to implement last November's successful MMJ ballot measure. Gov. Rick Scott signed the legislation into law. Although the law bans smoking cannabis, it adds 10 new licenses for producing and distributing MMJ with a cap of 25 dispensaries per permit.



## Illinois

A study of patients in Illinois suggests that CBD products are nearly as popular as THC products, and that women are the driving force behind sales of the former. The Illinois Medical Cannabis Patient Experience Study – conducted by Aclara Research, a Chicago medical marijuana patient research firm – found that 47% of patients said they use CBD daily and 22% had no previous experience with cannabis before joining the state's MMJ program. The survey of 300 patients also showed that women are the biggest reason for CBD's popularity in Illinois: Some 75% of female patients said they use it daily.

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## Maryland

The state's medical marijuana commission can continue to issue cannabis cultivation licenses. Maryland's highest court denied a motion to continue a temporary restraining order that blocked the commission from issuing cultivation licenses for about a week because of a lawsuit against the agency.



## Massachusetts

Massachusetts' House Speaker suspended negotiations on a recreational marijuana legalization measure, suggesting those talks were distracting lawmakers from finalizing another bill on the state's budget. The move could further delay passage and implementation of an adult-use cannabis law, which state legislators have been working on since 54% of voters passed a measure last November.



## Michigan

Gov. Rick Snyder appointed five members to the state Medical Marijuana Licensing Board, paving the way for the regulation and licensing process to get underway. The board will regulate growth, processing, transportation and the sale of medical marijuana. Former Republican Speaker of the House Rick Johnson will be chairman. Senate Majority Leader Arlan Meekhof appointed Johnson. Other members include Nichole Cover, a health care supervisor for Walgreens, and Donald Bailey, a retired Michigan State Police sergeant.



## Nevada

Nevada recreational marijuana sales began with a bang July 1, with store owners reporting that purchases far outpaced those of medical cannabis as the state became the fifth in the nation to offer adult-use products. Dispensary owners reported that hundreds of customers flooded their stores each of the first two days of sales, with shoppers snapping up edibles, flower and vape pens. MJ retailers are expected to ring up tens of millions of dollars in rec sales through the rest of 2017.



## New York

The state's five medical cannabis licensees were a signature away from being able to serve patients that suffer from post-traumatic stress disorder (PTSD). The state legislature gave final approval to a bill that would add PTSD to the qualifying conditions list for medical marijuana in the state. The bill was headed to Gov. Andrew Cuomo, "where its fate is uncertain," the New York Daily News reported.



## Ohio

Ohioans wanting medical marijuana have been crossing the border into Michigan, where some Detroit-area dispensaries will sell to out-of-staters who are issued recommendations for cannabis use months ahead of the drug becoming available in their home state, according to officials from a company providing the recommendations. The move is giving a boost to Michigan MMJ businesses before the launch of Ohio's own medical cannabis program in 2018.



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## Oregon

Despite strict efforts by Oregon regulators to keep pesticide-tainted marijuana from reaching store shelves, some contaminated cannabis is still slipping past the state's testing labs. The Oregonian, the state's largest newspaper, recently conducted a study to determine the success of Oregon's testing program in halting the sale of tainted marijuana.



## Pennsylvania

State health officials selected 12 business owners to grow and process medical marijuana, a landmark in the development of Pennsylvania's MMJ program. The agency granted MMJ cultivator licenses to firms scattered across the state. Pennsylvania's regulations don't include a residency requirement, and at least four of the licenses went to out-of-state companies.



## Rhode Island

State Senate and House lawmakers voted to end their debate over recreational marijuana legalization bills and instead created a 19-person commission to study the issue. Among the commission's mandates is the exploration of the recreational markets in states that already have it, such as Colorado and Washington. MJ advocates called formation of the commission a delay tactic that would encourage Rhode Island residents to buy marijuana in Massachusetts.



## South Carolina

The state is the latest to allow hemp cultivation, a move that's expected to create opportunities for farmers, makers of hemp-based products and ancillary companies offering goods and services to those growing and processing the plant.



## Vermont

Gov. Phil Scott signed off on a bill to expand the state's medical marijuana program. The law, which took effect July 1, increases the number of dispensary licenses and expands the list of medical marijuana qualifying conditions. The measure creates a fifth dispensary license and allows another to be issued when Vermont's MMJ patient count grows to 7,000. It is currently around 4,000. Separately, the state House blocked consideration of a bill to legalize recreational marijuana.



## Washington state

A state marijuana licensing employee is out of a job after leasing 25 acres of land to a cannabis cultivator planning to transform the site into a grow and processing facility. Grant Bulski – who had been issuing marijuana business licenses for Washington's Liquor and Cannabis Board since 2012 – violated the agency's ethics code forbidding employees from having a direct or indirect stake in the MJ industry.

– Roger Fillion

*Note: Entries sourced from Marijuana Business Daily and other national and local news outlets. These developments occurred before this magazine's late-July publication deadline, so some situations may have changed.*



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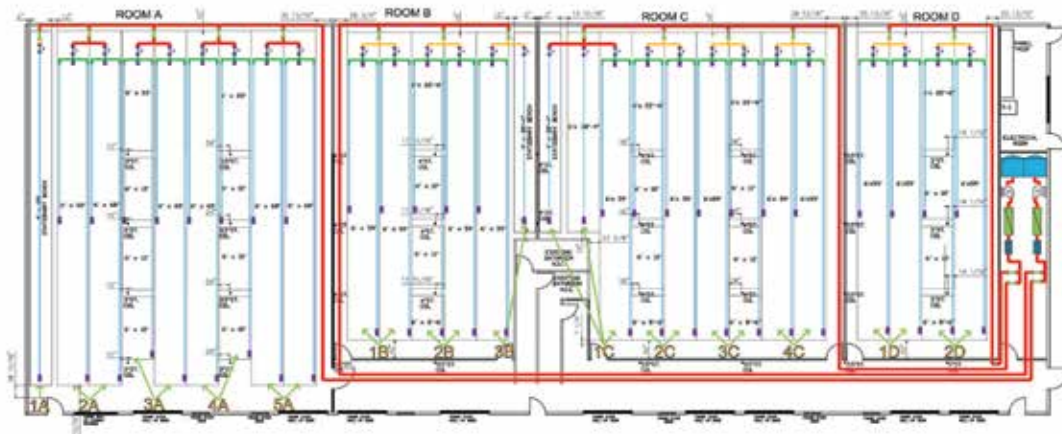
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*A look at  
how cannabis  
growers  
can use  
automated  
rolling  
benches to  
lower costs,  
maximize  
space*

An overhead  
crane with  
bench cleaning  
attachments.  
Photo courtesy of  
Joseph Mattord

# HED



by Omar Sacirbey

**"B**enches" usually don't come to mind when one thinks of cannabis cultivation.

But while they have been increasing efficiency, maximizing space and reducing labor costs in the flower and produce industries for years, automated rolling benches are just now beginning to make their way into marijuana.

The benches are actually large metal tables on which to place your plants, and they can come in a variety of sizes. Some may have flat or sunken surfaces to accommodate plant trays, while others have surfaces consisting of rolling pins that make it easy to push heavy plants along the table. More advanced models can be outfitted with crane or shuttle systems that can move whole tabletops of plants around a facility.

But the most important feature common to all versions is that they can retract and separate to create aisles at multiple points along the table.

## EXECUTIVE SUMMARY

**Automated rolling benches have been helping save time and money in other agricultural sectors for decades but are just now making their way into cannabis. Here's a quick overview on how they can help a cultivation site.**

- Automated rolling benches allow cultivators to eliminate aisle space and replace it with canopy space, increasing your grow's productivity.
- The benches come in a variety of sizes and can be customized with irrigation systems, shuttles and/or cranes that can transport whole tables with plants.
- Benches can save you labor costs and reduce the risk of injury to your workers.
- Benches can cost between \$3-\$12 per square foot, depending on the features and accessories you choose.



Automated rolling bench with trellised plants.  
Photo courtesy of Joseph Mattord

"Rolling benches are going to be a big factor in lowering peoples cost per pound for goods produced. They'll lower labor costs, they'll minimize human error, and it's a lot easier to scale up," said Joseph Mattord, a growing consultant with Meraki Gardens consulting in Portland, Oregon.

Here's a closer look at how cannabis cultivators can use benches to take their grow sites to the next level.

## Maximize Canopy Space

A key advantage that automated rolling benches give growers is eliminating many or almost all of the aisles that are found in typical grow sites. Growers can then put plants where the aisles once were.

When growers need to review the plants, they can pull sections of bench apart to create an aisle to walk down so that they can inspect each individual plant on either side of the newly created path.

"Instead of a fixed aisle way, you have a floating bench, and when you need the aisle, you create it by moving the floating bench," Mattord said.

Put another way, conventional tables mean an aisle every other table. Automated benches essentially let you work with just one aisle that you can create anywhere in your room.

Thereby, rolling benches can maximize your canopy space, especially in large rooms, because what used to be aisle space is now filled with plants.

“The more rooms you have, the more aisle space you’re going to need. So these rolling benches allow people to go into a larger space and maximize it, and they have a catwalk on two or three sides and then all the aisles are floating,” Mattord said. “It allows people to go up in size, which brings all kind of different issues when you get bigger.”

Mattord estimated that a grower can gain up to 20%-30% of canopy in a room using these benches, depending on their experience, methods and other factors.

The benches also reduce the possibility of human error, Mattord said, because they can be retracted anywhere in the canopy to create an aisle for the grower to walk down and take a close look at the plants. When a grow team has more access to the plants, they can better spot

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**“The more rooms you have, the more aisle space you’re going to need. So these rolling benches allow people to go into a larger space and maximize it, and they have a catwalk on two or three sides and then all the aisles are floating.”**

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### Save on Labor

Some rolling bench companies also manufacture overhead cranes that are specifically tailored to transport the benches across facilities, a measure that greatly improves efficiency, cuts labor costs and reduces the strain on cultivation employees.

“You can either have an employee walking with a plant under each arm through an acre facility,” Mattord said, “or you have a whole table loaded up with plants, already trellised, and then a crane

brings it to where it needs to go. That’s the type of automation we haven’t seen yet in cannabis, but it is coming soon.”

Imagine, for example, a bench that is 20 feet long, 5 feet wide and, depending on the strain, contains 30–45 plants that are supported with a built-in trellis system. The crane travels along tracks on the ceiling of the facility until it gets above the bench that needs to be moved. It then lowers grabbers that pick up the table with the plants on board before traveling along the ceiling tracks to the destination in the facility that it needs to get to.

The benches and cranes also come with accessories that can improve



Joseph Mattord of  
Meraki Gardens consulting.



Automated rolling bench with trellised plants.  
Photo courtesy of Joseph Mattord

efficiency. For example, the overhead cranes can have hoses attached to them for cleaning empty plant benches from above. The benches can also be outfitted with irrigation and drainage systems that Mattord describes as low pressure but high flow. The systems are designed so that water will not spill when the tables are moved by crane within a facility.

“They have a lot of liquid moving through them, and if you ever have an issue, you can flood your facility,” Mattord said.

All in all, Mattord said, the bench and crane systems are particularly helpful when you’re moving plants from a vegetation room to a flowering room.

“You can turn your rooms over a lot more efficiently and lot more quickly, and with less labor,” Mattord said.

### Bench Varieties

While Mattord said such bench and crane systems are new to cannabis, there are companies that are manufacturing them for cannabis growers.

“The Bentley” of these bench and crane systems and Mattord’s favorite is Hove, a German company, but he also believes GGS Structures in Ontario produces a good system. Less high-end but decent systems are also



manufactured by Conley Greenhouses in California and Midwest Growers in Missouri, he said.

There are also many greenhouse manufacturing companies that are producing these kinds of benches, Mattord said, but they are the “Walmart” version of benches that may not be as durable and long-lasting as the more established names.

But Mattord notes that for some smaller and more cash-strapped grows, even the lower-end versions can be good options, providing efficiencies and savings that the companies wouldn’t enjoy without a bench system. You can also phase into the different bench systems, Mattord said, opting for less expensive models first and then upgrading when you feel the need or

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**“You can turn your rooms over a lot more efficiently and lot more quickly, and with less labor.”**

---

have the capital.

If you have a hard time deciding which bench variety might be best for a grow environment, greenhouse suppliers are a good resource, Mattord said.

Whatever brand a grower decides to go with, the benches can be built to any size that the grower needs for their cultivation site.

The cost of installing a basic roll bench starts at \$3-\$5 per square foot, Mattord said, and then increases as you incorporate accessories like cranes and specialized irrigation and drainage systems. A top-of-the-line model with those accessories would be closer to between \$6-\$12 per square foot.

“It pays for itself because you gain canopy space and because it reduces error,” Mattord said. ♦

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# Limited Options

*Given the small number of equipment manufacturers, hemp farmers must jury-rig their own solutions or pony up for pricey harvesting gear*

*by Margaret Jackson*

**M**ore than 30 states allow hemp cultivation under provisions spelled out in the federal 2014 Farm Bill.

But farmers are struggling to find suitable equipment to harvest and process the plant.

Hemp has a fibrous stalk that can destroy machinery used for other agricultural crops such as hay. In one instance, for example, a combine caught fire after large, tough hemp stalks jammed the gears.

Hemp farmers, as a result, face obstacles that require deep pockets and/or creative thinking to navigate. The harvesting equipment, for starters, is pricey. A new combine can cost hundreds of thousands of dollars, and specialized equipment manufacturers are few and far between in North America.







Consequently, some farmers have sought to modify their own machinery in such a way that it can harvest hemp, a plant used to make health foods, organic body care, clothing, construction materials and plastic composites. But a makeshift solution requires skill and patience – and it may be necessary to work with the equipment manufacturer to come up with a suitable fix.

“One of the biggest issues is the lack of equipment,” said Damian Faris, director of agronomy at Colorado Cultivars, a Denver-based company that grows and wholesales industrial hemp. “The equipment that’s out there in Europe and Canada is to harvest the grain. We need to harvest the grain and the flower to make it viable for farmers to grow a crop that’s federally illegal.”

### Hemp Market's Size Limits Equipment Demand

Hemp-specific harvesting equipment is lacking because the fledgling industry hasn't generated enough demand to motivate manufacturers to make it,

according to John Finamore, executive director of the National Hemp Association (NHA), an organization that supports the growth and development of the industrial hemp industry.

Roughly 10,000-15,000 acres of hemp are planted nationwide each year, with the majority of that in Colorado. Most of the plants are on plots of 10 acres or less, so it doesn't make sense for farmers to purchase expensive equipment.

“There hasn't been the scale yet to necessitate a lot of sophisticated farming equipment,” said Finamore, a Colorado hemp farmer who grows about 200 acres of the plant. “If some of that equipment were available to some of the

local farm dealers it would probably get some rental use.”

### The Do-It-Yourself Approach

While sowing a crop is relatively easy using a corn planter that distributes seeds one at a time, mature hemp plants have tough stalks that make harvesting them difficult. So what's a farmer to do if he or she wants to cultivate a sizable hemp crop?

One option is to retrofit existing harvesting machinery.

That's what Colorado Cultivars opted to do. The company works with seven different farms around Colorado and currently has about 1,400 acres of hemp under cultivation.

## HEMP PRIMER

**H**emp is a small crop in the United States harvested for its fibers, seed, seed meal and seed oil. It is a distinct variety of the plant species *cannabis sativa L* that is frequently confused with marijuana.

The flower at the top of the hemp plant is the critical part for the pharmaceutical industry, because that's where the most CBDs can be extracted. The CBDs are used in food and dietary supplements for consumer health and wellness.

The hemp plant is characterized by long, slender fibers on the outside of the stalk. It's an annual that grows from seed. The plant grows well in a range of soils but tends to do best on land that produces high yields of corn. Hemp also attracts few pests because it grows so quickly, averaging between 6 and 12 feet in height in about four months. Historically, hemp has been processed by hand, which is extremely labor intensive.

The market for hemp is growing. Last year in Oregon, for example, nine farmers harvested five viable crops, a number that grew to 77 farmers this year. For 2018, there are 185 farmers registered for production, said Courtney Moran, an Oregon-based cannabis counselor and attorney.

Nationally, U.S. hemp production was estimated at about 12,800 acres in 2015 spread out among at least 650 registered or licensed growers, according to the Congressional Research Service.

But that's a far cry from, say, corn or wheat.

“We certainly don't have a sophisticated market like you have in most other agricultural crops where you have a commodity price that's predicted now and into the future and a commodity market that's willing to buy your crop no matter what,” said John Finamore, a Colorado hemp farmer and executive director of the National Hemp Association. “We just don't have that right now.”

– Margaret Jackson

### EXECUTIVE SUMMARY

**Hemp farmers face a limited number of options when it comes to finding suitable harvesting and processing equipment. Below are key factors at play:**

- Hemp-specific harvesting equipment is lacking because the fledgling industry hasn't generated enough demand to motivate manufacturers to make it.
- While sowing a crop is relatively easy using a corn planter that distributes seeds one at a time, mature hemp plants have tough stalks that make harvesting them difficult.
- Specialized hemp equipment manufacturers are few and far between.
- One option is to retrofit existing equipment – a process that may require the help of the manufacturer.



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Number of Weeks	Week 1	Week 1	Week 2	Week 3	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6***	Week 7	Week 8	Week 9
<b>KIND Base</b>	3ml	4ml	5ml	6ml	10ml	10ml	10ml	9ml	9ml	9ml	9ml	6ml	0
<b>KIND Grow</b>	6ml	8ml	10ml	12ml	6ml	4ml	0	0	0	0	0	0	0
<b>KIND Bloom</b>	0	0	0	0	6ml	8ml	14ml	15ml	15ml	16ml	16ml	12ml	0
Flavor Profile Supplement <b>Pure Blend Tea®</b>	10 ml	10 ml	10 ml	10 ml	10 ml	10 ml	10 ml	10 ml	10 ml	10 ml	10 ml	10 ml	0
Root Growth Supplement <b>Rhizo Blast</b>	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	0	0	0	0	0	0
Root Protection Supplement <b>Hydroguard®</b>	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	0	0
Salt Leach Supplement <b>Clearx</b>	0	0	0	0	0	0	0	0	0	0	0	0	10 ml
<b>Optional Supplements</b>													
Enviro	2 ml	4 ml	4 ml	4 ml	4 ml	4 ml	4 ml	4 ml	4 ml	4 ml	4 ml	0	0
<b>Silica Blast</b>													
Heavy Feeder / PK Boost <b>KIND Bloom</b>	0	0	0	0	0	0	2 ml	2-4 ml	2-4 ml	2-4 ml	0	0	0
Coco Coir Buffering <b>Cal-Mag Plus</b>	10 ml	10 ml	10 ml	10 ml	5 ml	5 ml	5 ml	5 ml	5 ml	5 ml	5 ml	5	0

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When Colorado Cultivars started farming hemp in 2014, it used an older combine to harvest its crop. But the machine kept catching on fire when the plants' tough stalks got caught in the gears, Farris said.

The company ended up buying a new combine and has been working with the manufacturer to develop a head specifically designed to harvest the plant material and seeds and leave the stalk in the ground. Farris declined to disclose the manufacturer's name.

"The stalk is what causes the problems," he said. "This combine is newer and hasn't been worn out, so it has more torque and ability to break the stalk."

### Equipment Manufacturers Limited

If you don't want to jury-rig your own harvesting equipment, you can turn to a manufacturer for a solution. But purchasing equipment is an expensive proposition – a combine can cost as much as \$500,000.

"Most farmers are growing for flower, so they can pick by hand," said Courtney Moran, an Oregon-based cannabis counselor and attorney at Earth Law. "But if they're cultivating for grain, they have to borrow or buy equipment."

But farmers have only a limited number of manufacturers from which to choose, particularly in North America. Below is a sampling from this country and abroad:

- Bish Enterprises, a Nebraska-based company that has been modifying existing equipment so it's suitable for harvesting hemp.
- John Deere, which manufactures farming equipment for harvesting hemp – though it's available only in Canada, according to the NHA's Finamore.
- HempFlax, a company in the Netherlands that has developed commercial hemp harvesting and processing machinery.

### Help From the University of Kentucky

Looking ahead, help may be on the way from Kentucky. The state is home to one of the nation's largest hemp crops. And the University of Kentucky has been working to develop machinery that farmers can use to harvest the plant.

In this case, the university was recruited to come up with a solution. In the summer of 2015, a participant in Kentucky's hemp pilot program approached the university's Department of Biosystems and Agricultural Engineering and offered to bankroll a project to design a harvester. The funder wanted to have a prototype developed by Sept. 1 of that year.

The result was the Wildcat: The hemp harvester cuts and gathers flower tops from crops in the field, sweeps them onto a conveyer and shoots them into another conveyer riding alongside the machine.

To develop the Wildcat, the university's engineers relied on existing technology. According to a March 2016 news release, engineers used the grain head from a combine and cherry-picked a number of useable parts. The Wildcat can hook up to any tractor with a front-end loader with a standardized connection, according to the university's news release. Electricity powers the harvester.

"Most implements use hydraulic power, but that would have made it harder to move from tractor to tractor," Tim Stombaugh, an extension agricultural engineer for the university, said in the news release. "We put a generator on the back of the tractor to create power for the harvester. All of the equipment can fit on the back of a gooseneck trailer, so it's very easy to move from one machine to another."

It's unclear when and if the Wildcat will be available for commercial purchases. Stombaugh declined to be interviewed for this story. The harvester spent 2015 on the university's campus and was scheduled to work in the field last year.



**Courtney Moran, an Oregon-based cannabis counselor and attorney at Earth Law.**  
*Photo courtesy of Kena Heck*

### Processing Equipment Also Lacking

The biggest hurdle to producing any type of textile crop is finding an industrial decorticator, a machine that peels off the fibrous outer layer of the hemp plant. One of the few, and perhaps only, U.S. companies to have its own large-scale decorticator is Industrial Hemp Manufacturing in Spring Hope, North Carolina. The company plans to use the German-made decorticator to process its own hemp as well as the plants grown by other cultivators.

The dearth of processing equipment for sale in this sector has forced hemp farmers to look overseas. Earth Law's Moran said she recently heard that someone in Colorado purchased a decorticator from Australia. Because the equipment is so expensive, it's likely that several farmers will share it, she said.

"Trying to develop a fiber industry is not a reality until we have the proper processing equipment," Moran added. "The equipment is available (in Europe and Australia), but it's a matter of getting it here. Different groups are working to bring the proper equipment for harvesting and processing. But it's a catch-22 – we can't build a market (for the equipment) until we actually have seed in the ground." ♦



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# KEEPING IT

by Bart Schaneman

# CONF



Arizona Dispensary Solutions trusts that its data security provider will maintain the integrity of the company's computers.  
*Photo courtesy of Arizona Dispensary Solutions*

## *Onsite servers, cloud computing among methods dispensaries can use to protect patient info*

**A**t PDI Medical, a dispensary in Buffalo Grove, Illinois, new patients must fill out a thorough intake form – similar to what they would complete in a traditional doctor's office.

The form asks for their social security number and other personal details

such as medical conditions, emergency contacts, a list of medications the patient is taking, any diagnoses and physician information.

"We use all that information to help us help the patient as we sit down and do the consultation," said Joseph Friedman, PDI's chief operating officer. "There's a lot of

pertinent, confidential medical information that's on those forms."

Indeed, PDI and other dispensaries around the country often collect a wealth of sensitive data about patients, though it varies depending on state requirements and the individual business.

# IDENTENTIAL



Keeping that information secure is therefore a crucial task: Data breaches could put patients at risk, which in turn might create a backlash against companies and the entire industry – not to mention land a business in legal hot water.

Sometimes dispensaries have no control over the situation.

In December 2016, a security researcher found that the personal information of more than 11,000 medical marijuana dispensary

applicants in Nevada could be accessed online, including social security numbers, home addresses and even physical traits. The revelation led the state to shut down its online portal. The Nevada Division of Public Behavioral Health followed up by investigating a possible cyberattack on its database.

So, what can medical cannabis dispensaries do to keep patient information secure?

They have a number of options, including storing information in the cloud or

on locked onsite servers. Overall, though, analysts agree that conducting regular backups, outlining a detailed security philosophy and researching your security provider are all crucial to keeping information out of the wrong hands.

## Consider 'Cloud' Coverage

Kind Financial, a cannabis compliance technology company based in Los Angeles, believes the answer lies in the cloud.

The firm uses the cloud computing platform Microsoft Azure for its



commercial application as well as for its government customers.

“Without giving away the secret sauce and letting the whole world go try to hack us, our application is housed in the cloud,” said David Dinenberg, CEO and founder of Kind Financial.

Kind Financial fully relies on Microsoft to protect its data. Dinenberg said he’s confident in Microsoft Azure’s government certifications and data storage redundancy.

Microsoft does not sell directly to cannabis companies, however. Kind Financial offers cannabis businesses compliance and financial software through a partnership with Microsoft to provide customers the same security and encryption features as Microsoft’s products.

Micah Thor – president of Tech Guru, a Minneapolis-based IT support company that provides strategy and business consulting for security businesses of all types – agrees. He said one of the easiest ways for a small business to keep its data secure when using only a few machines is to employ Microsoft-level encryption solutions.

## EXECUTIVE SUMMARY

**Cannabis dispensary owners often take in a trove of sensitive data about their customers. Here are some things to remember while trying to protect patient information:**

- Understand the benefits and drawbacks of using cloud-based software to store your data.
- Be aware of how shops can lose their data and how to spot potential problem areas.
- Develop a security philosophy that puts clients at the forefront.
- Ask the right questions of your software provider, including which systems may have a history of data loss.
- Bring in a consultant to help design your data security system.

## KEEPING COMPLIANT WITH HIPPA

**A**n important aspect for dispensary owners to consider when dealing with medical marijuana patient data is compliance with the Health Insurance Portability and Accountability Act of 1996.

While cannabis isn’t federally legal, maintaining a standard for compliance is useful in protecting the industry from federal law enforcement and meeting the criteria of the Cole Memo – which laid the groundwork for the recreational MJ sector.

“Maintaining client confidentiality whether you’re required to or not is important,” said Micah Thor, president of Tech Guru, a Minneapolis-based IT support company.

David Dinenberg, CEO and founder of Kind Financial in Los Angeles, adheres to the philosophy that his customers are patients, therefore his firm follows HIPAA protocols.

“We’re forward-thinking,” he said. “We believe that one day soon this is going to be a federally legal thing, and at the end of the day you’re going to have to be HIPAA certified. It’s much easier to prepare today for the future than it is to adapt in the future when you have shortcomings.”

Moe Asnani, partner at Arizona Dispensary Solutions, takes a similar tack.

“We go out of our way to make sure all physical records are kept locked,” he said. “Basically the same thing you would see in any medical office as far as HIPAA and patient confidentiality are concerned.”

As a former pharmacist, PDI Medical COO Joseph Friedman models his Illinois firm after a pharmacy. He trains his staff on proper treatment of patient information and mandates standard operating procedures for discussing private matters with patients.

“We do constant due diligence to make sure that as criminals get more sophisticated,” he said, “we’re keeping our defenses way up.”

– Bart Schaneman



Moe Asnani – a partner at Arizona Dispensary Solutions, which has multiple facilities – said state law requires his company to keep on file a patient’s name, address and date of birth. Asnani also uses an outside company, MJ Freeway, as his data storage provider.

“We always want to trust our platform that we use for patient record management,” Asnani said. “You can only do so much. Your data provider has to be the one who’s on top of the security infrastructure.”

## Do It Yourself

PDI Medical’s Friedman doesn’t trust the cloud, citing recent cybersecurity breaches involving MJ Freeway. Instead, PDI Medical uses an onsite server that sits in a locked, fireproof and waterproof rack. It isn’t accessible to anyone but PDI Medical’s IT professional. To date, the system hasn’t been breached, and Friedman doesn’t expect it will.

PDI Medical has compared the costs and benefits of having an onsite server versus storing data in the cloud. The result:





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A look at the waiting room at PDI Medical dispensary, which took its business model from pharmacies. Photo courtesy of PDI Medical

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**“If you’re using a server-based system – whatever that might be – if you get a virus or you get hacked, you’re totally exposed.”**

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PDI’s information technology specialist strongly suggested going with an onsite server. Friedman said it’s probably more costly, but the data is much more secure.

“That way we’re managing our own destiny,” he said.

He’s also not worried that the system could be compromised from the inside.

“A disgruntled employee won’t be able to get in,” Friedman said. “It’s secure from anybody and everyone.”

If someone wanted to access the server, they would have to physically break into the room where the server is housed.

“This way we have control of everything,” he added.

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The one vulnerability he sees is that when data is backed up offsite, it must travel from his server to the backup server.

To help mitigate that vulnerability, PDI added additional hardware and encryption features.

"We haven't had any breaches so I guess we're doing the right thing," Friedman said.

### Protect Your Computers

Viruses are the most typical avenues of data loss.

"Getting a virus on your machine could have all kinds of ramifications," Tech Guru's Thor said.

Both Dinenberg and Thor agree that retailers should be wary of viruses first and foremost. A computer can contract a virus by a user simply clicking on an email and opening something dangerous.

"A desktop virus is very common, and it could be tragic," Dinenberg said. "If you're using a server-based system – whatever that might be – if you get a virus or you get hacked, you're totally exposed."

You want to make sure you're performing regular backups and that your vendor is conducting security protocols.

Thor also recommends using a best-in-class antivirus program that is updated constantly. He also suggests real-time patching for Windows updates and third-party apps like Adobe, Flash and Java.

"Most every time that a virus gets on a computer, it exploited a known vulnerability from one of those applications," he added.

Thor suggests ensuring you're receiving a status report from the antivirus software to make sure your machine is still up to date.



PDI Medical in Illinois keeps its server onsite in a locked rack. Photo courtesy of PDI Medical

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“It’s not a set-it-and-forget-it type of scenario,” he said.

### **Develop a Security Philosophy**

A critical piece of protecting patient information involves developing guiding principles for data security.

Dinenberg has one key piece of advice on this end: If you operate a small business and incorporate programs you’ve developed, back everything up. Store your backups to the cloud. Make sure you’re using a very secure and well-known cloud.

“It’s like hiring a lawyer,” Dinenberg said. “You can save money and get a cheaper lawyer, but how protected are you? I would not look for a shortcut in data storage. It’s not that expensive in the first place, so you should choose the best, not the cheapest.”

Dan Stofka, Kind Financial’s executive vice president of engineering and operations, said your key security principles should “generally mimic that of health care facilities’ data security.”

His advice: Start by looking at the data security strategies of pharmaceutical manufacturers.

“Ultimately, a multitiered approach is ideal. That starts with front-line prevention,” he said. “Things such as password creation guides, change guidelines, bring-your-own-device policies, employee exit strategies and, at the back of the house, any of the vendors’ policies that hold your data must also be aligned.”

Another part of a dispensary’s security philosophy should involve limiting access to computers and servers with patient data, which should help prevent applications from getting on the computer that don’t belong there.

“In other words, only the IT person or the owner of the business should have administrative-level access,” Thor said.

That’s the same philosophy Friedman adheres to when keeping his server locked and off-limits to anyone but his IT technician.

“A multitiered approach is ideal. That starts with front-line prevention ... such as password creation guides, change guidelines, bring-your-own-device policies, employee exit strategies ...”

### **Vet Your Storage Provider**

Do your homework before selecting your storage provider. Ask questions such as:

- Where’s my data stored?
- What certifications do those data centers hold?
- Do they have a published data security disclosure?
- In how many locations is my data stored?
- Does the information leave the United States?
- How long has the company been in business?
- Have they had any data breaches?
- What is their file-level encryption policy?

You should be looking for a data center that adheres to industry standards, Thor said.

“You want to make sure that it’s not running out of their closet,” he added.

You also want to make sure your provider has a cybersecurity response policy. The provider is likely to be reluctant to disclose too many specifics for security reasons, but you’re looking to ensure the

data center has a redundancy program and a certain level of encryption that will be used for all web traffic.

Dinenberg recommends paying attention to the operational software you’re licensing. Notice how your vendor secures its data and, in turn, its customers’ data.

“You can never ask too many questions about security and data,” he said. “I encourage everyone in the marketplace to pay great attention to that.”

### **System Design**

Thor recommends working with a consultant in the data security industry to design your system – either a managed security provider or a cybersecurity expert.

“The landscape is constantly changing,” he said.

Your vendor should be able to sustain, as well as expand, and still deliver security superior security.

“I’m just a true believer in being able to grow with whoever your service providers are,” Dinenberg said.

“There are no secrets anymore in our world,” Dinenberg added. “If somebody wants to get something or find something, they’re going to try. All we can do is protect ourselves as best as we can.” ♦

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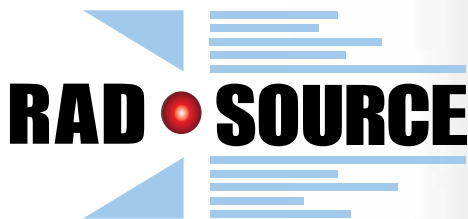
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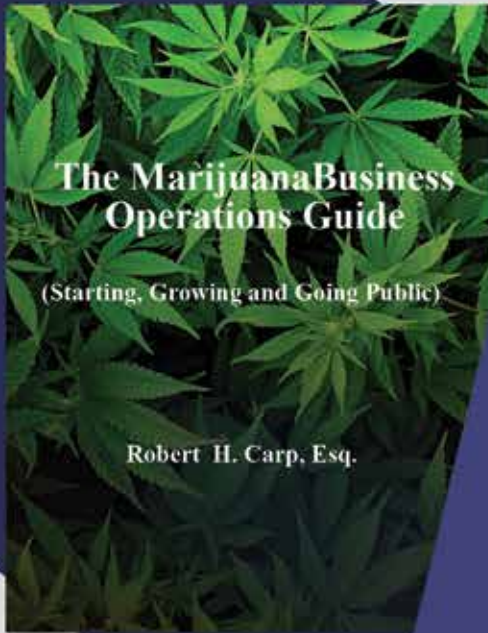
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# SECRETS OF THE PROS:

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## CANNABIS CULTIVATION TIPS

*From HVAC and harvesting to pruning and pest control, six expert growers share their advice*



Alecia Weisman, background, is lead grower for Legion of Bloom, which her husband, Russell, foreground co-founded. Photo by Lezlie Sterling

*by Omar Sacirbey*

**L**ife isn't easy for marijuana growers these days. Cannabis cultivation is becoming ruthlessly competitive in some markets, while falling wholesale prices and an increased focus by regulators on pesticide use are creating new challenges and long-term concerns. And then, of course, there are the common day-to-day hurdles that come with running an agriculture business, such as weather fluctuations, pest problems and the possibility of equipment failure.





Alecia Weisman is the lead grower at Oakland, California-based Legion of Bloom.  
*Photo by Lezlie Sterling*



Given that growers already face numerous obstacles that threaten their incomes, it's important to counter potential losses with gains in other areas, such as efficiency, yields and quality.

Marijuana Business Magazine interviewed six top commercial cannabis cultivators from around North America to get their tips for growing high-quality marijuana and keeping expenses under control. These growers cultivate indoors, outdoors and/or in greenhouses. Some are large operators with facilities well over 100,000 square feet in size, and others are craft growers. Between them, they have decades of experience and their tips have withstood the test of time.

The lineup (see box on Page 64 for bios):

- Alecia Weisman, Legion of Bloom
- Matt Sampson, North Coast Growers
- Jesse Horton, Panacea Valley Gardens
- Jeannette VanderMarel, Green Organic Dutchman
- Shane McKee, Shango Premium Cannabis
- John Andrie, L'Eagle Services

These experts shared their insights into six key areas of growing: heating, ventilation and cooling (HVAC); lighting; watering; nutrients and supplements; pruning, and harvesting.

We boiled down their advice to two dozen top tips to help other growers and cultivation companies refine and improve their methods.

## Heating & Cooling



### **McKee: Protect your investment and income with redundancy**

As a longtime cultivator, McKee knows it's inevitable that air conditioning units will fail.

"It doesn't matter what brand. We use high-end equipment and they all fail, they all have problems," he said.

So McKee's biggest priority is having a failproof system.

His advice for cultivation sites with hundreds of thousands of dollars in a grow room: Don't rely on just one large air conditioning or dehumidification unit. If it goes down, all the plants in the room could be lost.

Instead, it's better to have multiple units in a single room so that if one air conditioner experiences problems, the room will still have cool air from the others.

"For me its flexibility and redundancy," McKee said. "If I lose my air conditioning I don't want to lose all my air conditioning, I only want to lose a small portion of it, so we have multiple units."



### **Sampson: Use variable refrigerant volume technology to circulate only the cold air your environment needs**

Sampson swears by air conditioning units from Daikin, a Massachusetts company that invented variable refrigerant volume (VRV) technology in 1982. Units that use VRV circulate only the minimum amount of cold air needed to reach the desired temperature, helping cut down on power bills.

Sampson said his company can now cool the same space for 25%-50% of what it would cost before switching to the VRV technology.

"We paid more up front so we can be operationally cost efficient in the long run," Sampson said.



### **Horton: Consider desiccant technology – which is more expensive up front, but the payback is quick**

Horton prefers desiccant dehumidification technology over refrigerant-based dehumidifiers, and he believes this is where most HVAC technology is starting to go. Desiccant is a type of chemical that absorbs moisture but can also release it when heated. It often comes as a wheel with desiccant-coated flutes that can be placed on a wall. When it spins, it absorbs wet air.

The technology costs 50%-80% more than a regular dehumidifying and air conditioning setup, Horton said, but the payback period is pretty fast because the cost of electricity is lower.

## EXECUTIVE SUMMARY

In a ruthlessly competitive market, applying the right methods to keep costs down and increase quality could mean the difference between survival and failure. Here's a summary of key tips from six top growers:

- A successful heating, ventilation and air conditioning strategy involves redundancy and staying on top of the newest technologies.
- Lighting sometimes works best in moderation, while lighting without the proper precautions can overheat your plants.
- Don't overwater your plants, and give them time to dry out in between watering sessions.
- Fertigation isn't the only way to feed your plants. Foliar feeding and mixing nutrients directly into the soil can often be more effective.
- Observing how your plants react to being cut will help you decide how often or not you should prune your plants.
- Trichome color is a key indicator of whether a plant is ready for harvest.

"It's effective, and it also provides many efficient energy benefits and lets you recycle heat from your growing space," Horton said.



**McKee:** *Zone your units so plants are never exposed to excess light heat*

It's also important that air conditioners distribute air throughout a room. For example, if a room has four air conditioners, avoid having each unit responsible for one quarter of the space. If a unit fails, the grow lights will overheat and damage the plants in that section of the room.

The best strategy is to distribute air from all the units through the whole room via ducts. That way, when one

unit fails, all the plants will continue to receive cooled air from the other units.

For added protection against cooking your plants in the event of an air conditioning unit failure, McKee's facility has an automated dimmer that will lower the lights.



**Weisman:** *Light deprivation curtains can help with HVAC, too*

During the summer months when Weisman needs light deprivation curtains for her Legion of Bloom greenhouse, she goes with triple-layered breathable tarps.

These tarps not only block the sun when needed, but they also have an important environmental function by

allowing air to flow freely in the greenhouse and reducing the risk of mold and trapping too much humidity.

She estimated a 50-foot by 30-foot tarp costs about \$4,000, while a tarp for a hundred-foot greenhouse costs about \$7,000.

## Lighting



**Horton:** *Sometimes less is more*

Conventional wisdom says more lighting means more trichome production, larger flowers, better yields and an overall better grow.

That's not always true. In fact, Horton said many strains thrive with less light.

"I've gotten better production out of OGs with 600-watt lights versus

Co-founder Russell Weisman inspects some Legion of Bloom cannabis crops.  
Photo by Lezlie Sterling





1,000-watt lights,” said Horton, who used 1,000-watt lights for all his plants before switching over to 600-watt lights for most of his plants.

If you use too much light, what happens?

“You see lots of light stress,” Horton said. “From light stress, you’ll see plants that don’t finish as fast as you would like. Some plants get really leafy, or not dense because they’re stretching out.”

You can also identify light stress from leaves that are droopy instead of reaching up toward the lights.

Since making the switch to 600-watt bulbs, Horton said his strains have seen much healthier growth, and plants “finish when they should.”

“The vast majority of our strains don’t want thousand-watt lights. They prefer something with lighter demands,” Horton said.



***Weisman: Ease your plants into natural light***

Outdoor growers often like to start their plants indoors or in a greenhouse so the plants can get 24 hours of light (possible with supplemental lighting). But when they transfer those plants outside, problems can arise. The plants might get, say, only 15 hours of light and could face cooler temperatures. As a result, the plants can be tricked into thinking it’s time to go into flower mode, prematurely.

This situation can be avoided. Instead of immediately going from 24 hours to 15-16 hours of light, Weisman

recommends a gradual transition. This can be accomplished by reducing lighting by 30 minutes per day inside until you’re at the equivalent level of light the plants will receive outside.

Similarly, if you’re vegging your plants indoors, you want to give them some brief exposure to light by taking them outside and putting them in the shade for a couple of hours every day. That way, the plants get some indirect UV rays and “harden up” a bit before they go outside full time, Weisman said.

“We do that because it’s easy to sun damage or bleach your plant; this is especially true in the higher elevations,” Weisman said. “If you go from inside to high UV, your plants are probably going to bleach.”



***Sampson & McKee: Take steps to keep your grow rooms from overheating***

While strategically zoning your air conditioners is one way to prevent your grow rooms from overheating,

another important backstop is having lights that can react to an air conditioning failure. For example, Sampson of North Coast Growers likes the Gavita e-series, a widely used brand in both greenhouse and indoor grows. They have an auto dim feature and an auto shutoff if something happens with your HVAC gear.

“There are situations where you have HVAC shut down and then the lights cook the plants – it happens. This technology prevents that from ever happening,” Sampson said.



**A grow room at Panacea Valley, which prefers to use less lighting for its plants. Photo courtesy of Panacea Valley Gardens**



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“It doesn’t take long to cook a room. Your plants can survive a couple of days without the lighting, but they can’t survive more than a few hours if the room is past 90 or 100 degrees.”

Shango’s McKee agrees.

He uses multiple high-temperature light sensors because if one fails – which happens often – and you don’t have a backup, your plants will get cooked.

“We’ve had those sensors fail and not catch it. We’ve lost substantial revenue due to that,” McKee said.

## Watering



***Weisman: Give your roots a chance to dry***

Weisman of Legion of Bloom prefers doing a few big waterings rather than a little one every day.

The problem with watering every day is that the soil never has a chance to completely dry, so it’s always moist or wet – which leads to root rot. It also makes it harder for the roots to uptake nutrients because they are already saturated.

“When you water every day, your plants never have a chance to dry out,” Weisman said.

When Weisman does water, she prefers to do it in between nutrient feedings, which cleanses the roots of any nutrient residue left over from the feedings.

“By doing this, you promote a very clean root environment, and that encourages nutrient uptake,” Weisman said.



***VanderMarel: Tame the unpredictability of your well water***

Wells are nice to have for a source of water. But one of their quirks is a large amount of variation in the amount of nutrients – calcium, magnesium, etc. – the water is carrying from the well. This makes it hard to achieve consistent nutrient

levels, which makes for inconsistent results.

VanderMarel of Green Organic Dutchman deals with that problem by putting the water through reverse osmosis – removing any kind of extra particles from it – and then adding the desired blend of nutrients to the water.

To ensure that consistent amounts of nutrients are being added, VanderMarel uses dosing equipment to measure the amount of nutrients and then measures

the water with an electrical conductivity (EC) meter, which gives growers a read on the amount of nutrients present. That eliminates inconsistency tied to the amount of nutrients in the water.



***Sampson: Invest in a pump***

In his facility, Sampson keeps a few thousand-gallon tanks of water in one spot.



**Though their techniques may vary, cultivators all seek the same result – a cannabis plant that’s as close to perfection as possible. Photo by Lezlie Sterling**

The tanks have pumps that can handle 80 gallons of water per minute and feed into holding tanks in the other vegetation and flower rooms. In turn, the tanks in those rooms feed into drip irrigation systems.

Before erecting this watering system, Sampson's team spent hours a day filling the tanks with hoses. Sampson then decided to implement his current system, investing \$25,000-\$30,000.

The result? It's reduced the amount of man hours spent on watering from eight or more a day to just 30 minutes, Sampson estimated.

"You don't want to be paying anyone any amount of money to hold a hose and watch a tank fill," Sampson said. "If you can make sure that flow is as fast as it can be, that is worth quite a bit of money over the long run."

## Nutrients and Supplements



**VanderMarel: Add some organic nutrients directly to the soil**

Organic phosphorous comes as what VanderMarel describes as a ground-up, powdery mineral. She tried to feed it through her standard irrigation system, but the minerals weren't fine enough and kept clogging the lines.

So now, VanderMarel adds the organic phosphorous directly to the soil.

Her company buys a pre-blended soil mix that includes most of the nutrients VanderMarel wants in her soil anyway, so she doesn't have to add many nutrients. She also believes nutrients are more effective when they are premixed into the soil rather dissolved in water and then added.

Magnesium, molybdenum and zinc are other trace minerals that are better off going straight into the soil, she said.

"They're all trace materials that are needed to grow good plants, but they're much easier to blend into the soil than have them in a fertilizer mix," she said.

# WHATEVER YOU DO, DON'T DO THIS

Successful cannabis cultivation involves not just using the right techniques on your crop, but also avoiding those that could hurt it. Marijuana Business Magazine asked six experts about what they should avoid at all costs.

**John Andrie: Crowding your plants.** Too many growers crowd their plants and don't give them enough room to grow, while also inadvertently making their sites more vulnerable to pests, mold and mildew. "Indoor cultivators pack as many plants under as many lights as will fit into their space," Andrie said. L'Eagle gives its plants ample space to grow. To some visitors, the site might seem empty, but it's a big part of the reason why the company's plants have been free of disease and pests.

**Jeannette VanderMarel: Overwatering.** "Cannabis plants hate to have wet feet," VanderMarel said. You'll know your plants are overwatered when their leaves curl down. To avoid this, water until your plant is fully saturated and a little water comes through the bottom, and then let it get relatively dried out and make sure it still has a period of several days without water.

**Alecia Weisman: Overwatering.** Many growers often have two problems when it comes to watering: Firstly, they use small volumes of water too frequently, which creates a soil zone that is continually moist but never substantially wet. Secondly, they forget to check in with the plant on whether it's thirsty or not and instead stick to a strict watering regimen – despite the need to change the schedule based on how quickly, or not, the plant is taking up water. Especially in greenhouses or outdoors where temperatures and humidity levels are not static, it's important to check in with the plant to decide whether or not to water.

**Shane McKee: Wet trimming and rushing the drying and curing process.** Never wet trim or trim with a machine trimmer, and never cure it on a drying table. Why not wet trim? Because flowers in a cure room tend to dry from the outside in, locking chlorophyll in the flower and giving it an unwanted fresh grass aroma. "It has that dried-in-a-hurry flavor," McKee said. "So many people will do a wonderful job for months and then mess it up in the last couple of weeks or not spend the extra \$200 a pound to hand trim it."

**Jesce Horton: Be careful whom you hire.** Avoid hiring "master growers" over good, smart and passionate people who may need training.

**Matt Sampson: Machine trimming.** More commercial producers are using trim machines. For many reasons, we do not and will not.

– Omar Sacirbey





**Weisman:** *Foliar feeding is an easy way to nourish plants whose roots may still be saturated*

During vegetation, Weisman ideally feeds her plants once per week. But if it's a cooler week and the plants don't dry up so fast, she will also do a foliar feed – spraying food on the leaves. That way, even though the roots may not have dried out, you can still feed the plants through the leaves and avoid risking root rot by oversaking the roots.

During the bloom phase, they feed more aggressively – every five days – but stop feeding altogether about three weeks before harvest.



**Andrie:** *Don't rely too heavily on nutrients*

Used properly, nutrients can lead to healthier, stronger plants. But don't deceive yourself into thinking that nutrients will make your crop great. For plants, potassium, nitrogen and phosphorous are not as necessary as CO2 and light.

If your plant is having problems, the solution probably isn't more nutrients. More likely, the problem will probably be in the environment, such as too high of a temperature, or salinity, which can cause the plant to “lock out” nutrients.

Rather than following the exact instructions for how much nutrient they use, Andrie of L'Eagle recommends

## EXPERT ADVICE

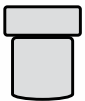
Marijuana Business Magazine consulted with six cultivation experts to get their tips for this piece. Here's a snapshot of their backgrounds.



	John Andrie	Jesce Horton	Shane McKee	Matt Sampson	Jeannette VanderMarel	Alecia Weisman
<b>Company &amp; headquarters:</b>	L'Eagle Services. Denver	Panacea Valley Gardens. Portland, Oregon	Shango Premium Cannabis. Portland, Oregon	North Coast Growers. Anacortes, Washington	Green Organic Dutchman. Ontario, Canada	Legion of Bloom. Oakland, California
<b>Growing method:</b>	Indoor	Indoor and greenhouse	Indoor, greenhouse, and outdoor	Indoor	Indoor and greenhouse	Greenhouse and outdoor
<b>Size:</b>	10,000 square feet	Now has a 5,000-square-foot indoor site and an 8,000-square-foot greenhouse. Company is building a new facility that will have 20,000 square feet of grow space plus a 12,000-square-foot greenhouse	Seven facilities in three states totaling more than 100,000 square feet among them	Now 6,500 square feet, but North Coast's license allows it to have up to 10,000 square feet of canopy	By the end of the year, the company's facility will be 150,000 square feet. Of that, 30,000 square feet will be indoor and 120,000 square feet will be hybrid greenhouse	1 acre total. The main farm has about a half-acre of canopy, while the company also has a “few satellite farms” that comprise another half-acre
<b>Experience:</b>	Eight years commercially	Four years of commercial growing	20 years total – 10 as a “legacy” grower and 10 as a legal commercial grower	Received “Tier 2” license in 2015	Has had commercial license for about one year, and before that had a personal cultivation license for eight years. Grew up in an apple-farming family in Ontario and, before cannabis, owned and operated a lilac farm	Growing for 12 years, commercially for the last six years

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that growers go underneath the recommended amount and see if their plants do better with less.

“One of my favorite tests was in 2013 when we grew plants without any nutrients in the flowering stage and the end result made shockingly little difference,” Andrie said.



**Weisman: Avoid ammonium nitrates, and complement nutrients with compost**

Legion of Bloom's Weisman uses a proprietary blend of organic nutrients, including a fish powder nutrient that she likes for foliar feeding. She follows up those feedings by giving her plants a compost tea that contains five different sources of compost or humus to provide the highest possible microbial diversity to the soil.

“Once those microbes enter the soil in the presence of nutrients, they increase nutrient uptake,” Weisman said.

## Pruning



**Horton: Study how your plants react to being topped**

Different strains react differently to being pruned, as well as to the different methods of pruning, namely topping – cutting more off the top of the main stalk – and FIMing (FIM is an acronym for “F\*\*K I missed”) – cutting less off.

Cultivators must study and note how their plants react to being pruned and record the outcomes. If the plant sprouts its new branches quickly, that means it likes being pruned and can handle regular and frequent pruning. If the reaction time is slow, it means the plant takes time to recover from being cut, and it doesn't like being pruned, so prune cautiously.

# MAKING THE MOST OF MISTAKES

Our experts shared some of the biggest missteps they've made – and what they learned from the experience.

**Shane McKee**

**Mistake: Growing during construction**

McKee of Shango Premium Cannabis understands that cultivators often have to start growing before their facility is completely constructed, because he's done it, too.

“We all know a lot of us have had to bootstrap our businesses or we've expanded over time,” McKee said.

Still, it's a bad idea.

“It's brutal having that [construction] going on and the changes in the gardeners' and trimmers' lives and the day-to-day changes to the motions of your facility,” McKee said.

Then there's the dirt, contaminants and disease that are introduced by contractors going in and out of your building every day.

**Lesson:** Avoid situations where you must grow while construction is happening at your facility. One way to do that is to build a facility that can be scaled with minimal disruption. But don't expect a cultivator to know how to design such a facility. Instead, get a professional consultant to design your building.

**Alicia Weisman**

**Mistake: Not having enough staff**

In its early days, Legion of Bloom had a small staff and was “often short on hands for big projects like harvesting or planting up.”

**Lesson:** “We have learned that the best approach is to hire big swing crews for the big projects to ensure they can be completed in a short time. When working with

plants, it is most efficient to complete planting within a day or two so that each group of plants is on the same feed schedule. It's important to know your limitations and be prepared to expand your team when it is needed.”

**John Andrie**

**Mistake: Overestimating the value of producing quality over quantity at the wholesale level**

There isn't a retail store in Colorado that will pay \$1 more for “completely clean” – meaning no treatments of any kind in the flower stage, including organic treatments – cannabis flower or concentrate, L'Eagle Services' Andrie said. To them it's a commodity, and as a result their decisions are based



**Weisman: Prune frequently**

"We like to prune often," Weisman said.

For example, let's say you have an 8-inch plant in an intermediate five-gallon soil pot that is getting into the vegetation stage. That plant will start with one stalk, but if it's healthy enough and has several nodes, you can "pinch"

— or cut — the stock down at least one node to 6 inches. When that stalk is cut, it releases two more branches that become the main stalks. From there, after it grows a couple more nodes, you pinch another node, so that every couple of nodes, you have a new branch.

"That creates a nice, broad bushy look," she said.

After Weisman tops a plant, she gives it a week or two, sometimes three weeks, to see how it grows. If it's looking tall and lanky, you want to get rid of that look.



**VanderMarel: The Screen of Green method will let your best buds rise to the top**

The Screen of Green method stress-trains the plants to grow surrounded on the sides and tops by a wire screen. This trains the plants to grow at a flat canopy, Green Organic Dutchman's VanderMarel said. The

leaves at the bottom don't add much to the plant, so all those are removed. VanderMarel uses a flat screen to get an even canopy crop and ensure the flowering buds can come through the screen.

"It also keeps it very clean and neat," she said. And because VanderMarel's crew works with cloned plants, they essentially grow to the same heights, "so you have a nice even, consistent crop," she added.

They don't allow any of the lower leaves or branches grow, instead preferring to let the flowers grow on the top branches.

on margins that begin with low expenditures.

**Lesson:** "What I learned from it is that if we want to grow a product this good and completely clean, our costs are too high for us to sell on the wholesale market as we can only sell it in our store and for the same price other stores sell their products," Andrie said. This might lessen profit margins, but it strengthens brand loyalty, Andrie added. "In the long run, I believe brand loyalty will be more rewarding to us, both financially and emotionally, than our margins in 2017," he said.

**Jeannette VanderMarel**

**Mistake: Running non-dissolvable nutrients through irrigation hoses**

Organic nutrients are nice, but

one problem they pose is that they do not dissolve in water and therefore can clog lines.

"We tried everything to get phosphorous to run through our fertigation line," Green Organic Dutchman's VanderMarel said. "What a disaster."

**Lesson:** Use only water-soluble nutrients in your irrigation systems, and mix those that aren't water soluble directly into your soil.

**Matt Sampson**

**Mistake: Working with everyone**

"Early on, our biggest mistake was selling our products to anyone we legally could. We were so eager to generate revenue we offered our products and services to anyone with a license, particularly on the

clone side of our business," North Coast Growers' Sampson said.

**Lesson:** "We are now very selective in terms of the companies we will work with in this industry. We have learned that your partners in this industry certainly have the potential to make or break you," Sampson said.

**Jesse Horton**

**Mistake: Growing too many strains**

"It's hard to get the most out of genetics when you have to learn and track so many variables," Horton of Panacea Valley said.

**Lesson:** Keep the number of strains you grow manageable, so you can track how they perform in different situations.

— Omar Sacirbey





Shango uses multiple high-temperature light sensors as a safeguard in case one fails.  
Photo courtesy of Shango Premium Cannabis



***Weisman: Sativas can handle more cutting***

Sativas can handle more cutting because it's a more stretchy variety than indicas. This characteristic means the plants are physically better suited to handle a cut. But because many or most plants nowadays are hybrids, it's hard to make generalizations or forecast how an individual plant might react. Rather, you must observe and pay attention to your plant, Weisman said.

**Preventing Pests, Mold and Mildew**



***Sampson: Raise the dehumidifiers at night***

When plants are in their flowering stage, they give off moisture during their night cycle, which raises humidity levels in the room. And more humidity increases the likelihood of pests, mold or mildew being introduced to your grow room. Knowing that, growers must increase the work rate of their dehumidifiers at night to reduce the added humidity, Sampson said.



***Andrlé: Harvest your rooms completely so they can be cleaned***

Harvesting in complete cycles allows for proper hygiene maintenance of a cultivation facility while harvesting perpetually does not, according to Andrlé.

Even though cyclical harvesting makes trimming more difficult, Andrlé said, it is still worth it over time because it allows you to clean and disinfect in the form of less problems.

"While imperative that flower rooms must be full of plants 365 days per year in order to be operating at 100%, if ours is full 355 days (and being cleaned the other 10, and L'Eagle is operating at 97.2% instead), we're OK with it as we save time and money the rest of the year not dealing with the same pest and disease issues that plague everyone else," Andrlé said.

**Harvest**



***Weisman: Take a close look at the trichomes***

Have a small microscope on hand. You don't need a tabletop scientific microscope, but there are smaller handheld microscopes that are 100x or 60x that you can buy at your hydro store that enable you to look at your buds and see the milkiness of the trichomes.

If your trichomes become a little amber, then they're ready. You don't want them to be clear – that means it's too early – and you don't want them to become too amber, which means they're overready.



***VanderMarel: Keep your harvesting tools sanitary***

As a craft grower who harvests every week or two, VanderMarel said keeping the harvesting tools super clean is vital. How does her company do it? It has a microbiologist on staff who swabs and tests all the tools for contaminants before they are used for trimming.

And those tools don't leave the harvesting part of the facility; they don't go into any other room.

If you use a clipper in the cultivation area, where it's exposed to bacteria that occur naturally in the soil, you don't want those same clippers or that bacteria touching your final product.

"We don't want to risk contaminated tools touching the final product," VanderMarel said.



***Sampson: Don't wait too long to harvest***

Many people harvest way too late, which can leave your product overripe or smelling like cut grass. North Coast's Sampson likes to harvest a little earlier in terms of trichome color. After harvesting, Sampson dries the plants upside down in a cool, dark, room for a couple

of weeks and then dry trims. That makes for better trichomes and more terpenes. ♦



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# NEED FOR

*A look at how infused product companies are betting big on fast-acting edibles*

*by Bart Schaneman*

# SPEED



**D**rivers of performance cars and consumers of marijuana edibles have one thing in common: They're both focused on speed.

At least that's what several edibles manufacturers are betting on – and they believe it will be the next major wave to sweep the infused product market.

Companies across the country are shelling out money on research and development based on the assumption that medical and recreational marijuana users don't want to wait 30 minutes or longer for their edibles to kick in. The reasoning: Consumers are an impatient bunch.

"It fits the American culture so much better to have things that are faster-acting," said Michael Devlin, co-founder and CEO of the Seattle-based infused product company Zoots, which is developing a line of fast-acting edibles. "We're Americans. We want it now."

## How They Work

Traditional edibles take anywhere from 30 minutes to several hours to deliver their impact. By contrast, fast-acting edibles makers claim their products can take less than 15 minutes for the THC and CBD to take effect.



A 1906 technician, left, conducts a quality-control check where a random sample of chocolates is precisely weighed to ensure each piece is within the appropriate weight range. Photo courtesy of 1906



High Love chocolates by 1906 are fast-acting dark milk chocolates made with the hybrid strain Blue Dream. Photo courtesy of 1906

Two products that best-suited for this are:

- Gum and chewable tablets, where the thin mucous membranes in the mouth absorb the THC and CBD. In the case of sublingual absorption, the process occurs under the tongue. Buccal absorption, meanwhile, occurs between the cheek and the gums.
- Chocolates, where the THC and CBD are encapsulated in lipids to bypass the first path of digestion – i.e., the stomach. This way, the THC and CBD enter the small intestine and liver much more quickly versus traditional edibles.

Jake Heimark, the founder and CEO of Plus, in Palo Alto, California, has developed Plus Gum, a fast-acting sublingual medical product sold in 25 and 50 milligrams of THC units that the company says take less than 15 minutes to work.

“Many edibles take hours to take effect,” he said. “That’s just not similar to the way that alcohol works or other medicines work.”

His company was looking for a product that released the cannabinoids faster. Sublingual absorption under the



tongue has been found to be faster acting across many traditional medications.

“Turns out it’s true in cannabis as well,” he added.

Lounette Alexander – director of research and development and quality assurance for Kiva Confections, based in Oakland, California – came to cannabis from a career working with over-the-counter medicines.

She looks at edibles this way: “Fifty percent of the population sucks and 50% of the population chews. If you suck on the product you’re going to get absorption right into the bloodstream, sublingually and buccally.”

Kiva Confections has a 2.5-milli-gram chewable tablet mint called Petra that, depending on the individual, takes 10-30 minutes to kick in.

## Methods of Development

At 1906, a chocolates edibles company based in Commerce City, Colorado, CEO Peter Barsoom is using a technique his firm borrowed from the pharmaceutical industry called lipid microencapsulation. The company encapsulates the THC and CBD in a coating made up of medium-chain fatty acids, allowing the cannabinoids to sail past the stomach and enter the small intestine, liver and blood stream “significantly faster,” according to Barsoom.

“Lipid microencapsulation is like the bullet train with the THC and CBD as passengers,” he explained. “When you ingest it, it goes from your stomach into your small intestine and liver significantly faster than any other edible.”

## EXECUTIVE SUMMARY

**Edibles companies are turning to fast-acting products to boost revenue. Here’s why and what’s involved:**

- Edibles executives believe consumers want infused cannabis products to kick in sooner versus later.
- Depending on the individual, these newer edibles can take as few as five minutes to work.
- Fast-acting edibles could help combat overconsumption by delivering the desired effect more quickly, making it less likely consumers will ingest additional product.
- Creating fast-acting products requires an understanding of how the human body absorbs marijuana.
- Fast-acting products could be the next significant evolution in the edibles market.

Creating fast-acting edibles requires an understanding of how humans absorb drugs biologically. When scientists discuss increasing the efficiency of absorption, they talk about enhancing bioavailability. Medicine that isn’t

very water soluble creates barriers to bioavailability.

Lipid-based drug delivery systems are one technique edibles companies are experimenting with to increase water solubility and absorption, therefore increasing bioavailability. Among pharmaceutical drugs, ciclosporine – an antirejection medication that suppresses the immune system – has seen increased efficiency through a lipid-based delivery system.

According to Barsoom, it should take consumers 15-20 minutes to feel the effects of the cannabinoids in a fast-acting edible.

## A New Chapter

Because they are more complex, fast-acting edibles are more expensive to produce than regular edibles, and so they command a higher price.

Commonly, edibles are priced at \$20-\$24 for 100 milligrams of THC (10 servings). By comparison, 1906 chocolates typically retail for \$24 for a box of six servings, Barsoom said.

1906 sources a different single strain of marijuana for each accompanying effect. For its dark chocolate energy

## WHAT’S FUELING THE FAST-ACTING EDIBLES SHIFT?

**N**eil Barsoom started his chocolate edibles company about 2 1/2 years ago based on the assumption that, over time, more consumers would prefer infused products over smokable cannabis. Additionally, Barsoom – the CEO of 1906, based in Commerce City, Colorado – wanted to offer his edibles customers more choice than just gummies, brownies or hard candies. In particular, he wanted to provide a choice in what the product does.

To begin, consumers are often pressed for time.

“Most of the market currently caters to the heavier user, stoner community,” he said. “For those of us that don’t have six hours on a couch with a piece of an edible, there is much to be desired.”

Barsoom also drew on his own experience and that of his friends.

“I think we all know someone who has had a negative experience from an edible,” he added. “They took

one, they didn’t feel anything. Maybe it kicked in an hour later. It’s that uncontrollability of it which can be unsettling.”

Jake Heimark, the founder and CEO of Plus, in Palo Alto, California, called fast-acting edibles “a better user experience, flat out,” adding: “Nobody wants to wait. There’s no reason to wait if you don’t have to.”

Michael Devlin, co-founder and CEO of edibles maker Zoots, based in Seattle, sees the trend toward fast-acting edibles as a safeguard against overconsumption: A consumer ingests an edible, it doesn’t work quickly enough, and the person takes more and soon it becomes too much.

“That’s bad for everybody,” he said. “The individual. The company. The industry.”

– Bart Schaneman



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## PRODUCT SAMPLER

Some fast-acting products and the soonest they can take effect, according to the manufacturer:



Plus Gum,  
25 milligrams THC,  
5 minutes



Plus Gum,  
50 mg THC,  
5 minutes



Kiva Petra  
Moroccan Mints,  
2.5 mg THC,  
10 minutes



Kiva Petra  
Eucalyptus Mints,  
2.5 mg THC,  
10 minutes



1906 Go chocolate,  
5 mg THC,  
15 minutes



1906 High Love  
chocolate,  
5 mg THC,  
15 minutes

product, Go, the company uses the sativa strain White Out. For the dark milk chocolate relaxing product, Pause, 1906 uses the indica strain Pokie.

"We see ourselves not so much in competition with other edibles," he said, "but in competition with chardonnay, with Xanax, with Ambien, with a cup of chamomile tea, with a 5-Hour Energy drink. All the things that you do to

achieve certain states."

Heimark said Plus' edibles are "market competitive" and he sees only more growth ahead for this type of product.

"There's a large portion of the market that, as people get more familiar with edibles, will gravitate toward fast-acting," he predicted. "The edibles market is the fastest-growing segment of the market, and for a reason. The user

experience. And it's only going to get more popular."

### Creating Edibles No Slam Dunk

Creating fast-acting edibles is more difficult than traditional infused products, given the complexity of the human body's biological system and a host of other factors tied to absorption of THC and CBD.

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Plus' fast-acting gum can work in less than 15 minutes, depending on the individual.  
Photo courtesy of Plus



Devlin, for example, said he and Zoots have found developing this particular style of edible “pretty darn challenging.” One main hurdle has been creating a fast-acting product without altering the natural state of the cannabis. Zoots officials would like to create nanosized cannabinoid particles that have a better chance of being absorbed through the body’s membranes. But

they haven’t perfected it.

Still, Devlin believes it’s worth the effort. “We definitely feel that this is important to the industry and also to the consumer,” Devlin said.

Compared to alcohol consumption, where a consumer will sit and drink multiple beers over the course of a few hours, marijuana consumption is more often an “all-at-once than sit-around-and-wait

Petra mints are fast-acting, and the THC can be absorbed sublingually and buccally.  
Photo courtesy Kiva Confections



kind of experience,” Devlin said.

He sees low-dosage, fast-acting edibles as a way to normalize consumption and make it more social.

Could this trend revolutionize the industry?

“I truly believe it will,” Devlin said. “I think it will end up being the new way edible products are manufactured and consumed.” ♦

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# Doubling Down During Delays

*Hawaii dispensary weathered delays in the state's MMJ rollout by staying lean and mapping out a strategic plan*

by Joseph Peña

**W**hen Aloha Green received one of Hawaii's first medical marijuana licenses last year, it expected to begin selling to patients fairly soon.

But the state's program has moved forward in fits and starts since then, forcing Aloha Green and Hawaii's seven other vertically integrated MMJ businesses into a holding pattern. As of June, the market had still not launched.

## EXECUTIVE SUMMARY

**Regulatory delays don't have to sideline growth or consumer outreach. To thrive during uncertain times, Tai Cheng – the chief operating officer at Hawaii's Aloha Green – offered these tips:**

- Conduct early, strategic patient outreach and create quality, tailored education materials to share with patients, physicians and trade associations.
- Don't overpromise and underdeliver – share only accurate information with patients that fosters trust.
- Phase your construction plans for production facilities and storefronts, and plan your retail space to be compliant with the Americans with Disabilities Act (ADA) Accessibility Guidelines.
- Research your patient registry and price points; take into account black-market prices and your state or region's unique factors.
- Take advantage of time during regulatory delays to get your grow in order.



In pre-production, an Aloha Green worker prepares the facility.  
Photo courtesy of Aloha Green

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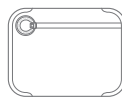
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These kinds of regulatory delays are common in new markets – but lean and strategic businesses can expertly navigate them to stay on course.

Aloha Green is a prime example. It doubled down on patient, physician and media outreach, market research, phased construction plans, and employee training and retention. The team's strategy supported its central goals: to sell the state's first legal cannabis in its dispensary and position the brand as a leader in the market, said Tai Cheng, chief operating officer at Aloha Green.

"We're focused on becoming a thought leader and resource pool for patients and physicians before dispensaries open in order to build relationships, trust and familiarity with our brand," Cheng said. "There isn't any real mainstream, leading source of [medical marijuana] information for Hawaii's patients, so we're trying to establish that before sales begin."



**An Aloha Green clone plant in a vegetative state.** *Photo courtesy of Aloha Green*



**Aloha Green has an ample turnout for its ribbon-cutting ceremony.**  
*Photo courtesy of Aloha Green*

### **Early Patient, Physician and Media Outreach is Key**

During regulatory delays, contact with patients and physicians is critical, Cheng said. Patients will be your customers, and doctors are responsible for recommending MMJ as a medication.

"There's so much work to be done," Cheng said. "All it takes is old-school

legwork, phone calls and showing up when and where you say you will."

Cheng advised using the downtime to create a community outreach plan as well as educational material to share with patients and trade associations that represent doctors, senior care facilities and pain management clinics, he said. Also, tailor information for caretakers, veterans, seniors or patients with specific qualifying conditions or symptoms for MMJ.

Aloha Green, for example, wrote a patient handbook for its license application and shared the material on its website. It also created a newsletter patients can subscribe to, a handy marketing tool in a state that bans MMJ dispensaries from advertising but doesn't clearly define what constitutes advertising.

Media outreach also is important and can be done before the market opens. To get in front of audiences, Cheng's team timed its media releases for news cycles and sent information to news outlets through a separate mailing list. The executive team also made it a priority to take most interview requests to build brand recognition.

Newspaper mentions and television spots boosted traffic to the Aloha Green website, a major point-of-contact with patients.



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Social media still poses a challenge, given that companies such as Facebook and Instagram have closed cannabis accounts. So Aloha Green avoided sharing photos of cannabis online. Instead, it used its social media channels to promote its patient education materials and to share information.

### **Phase Your Construction Accordingly**

When faced with a delay, be careful how fast you move and how modular you are with your infrastructure and planning, Cheng advised.

You don't want a stranded asset you can't use, he said. For example, a 20,000-30,000-square-foot grow might not serve your best interest, particularly during regulatory delays. If a part of the facility is still under construction, the incomplete asset can be of little use.

Aloha Green phased the construction of its production facilities and storefront to be mindful of delays and still be first to market. It prioritized a small indoor nursery and its first dispensary location, and the company focused on meeting code requirements before expanding.

In May, Cheng estimated the phased construction of its grow and dispensary gave Aloha Green a three-month lead on the competition, meaning it was well ahead of its goal to sell the first legal cannabis in the state from its dispensary.

"We pushed hard and leaned forward with construction, and when we knew delays were coming, we laid off the gas a bit," he said.

Like any new business, he advised, budget carefully. If you employ a phased approach to construction, it's less likely you'll sit on an asset that isn't complete, or delay completing an asset because you don't have the need or demand for it.

"Always budget for delays and cost overruns," Cheng said.

## **HIRE A DIVERSE WORKFORCE**

**T**ai Cheng, chief operating officer at Aloha Green, said the team's director of integrated strategy, Helen Cho, was key in breaking down patient demographics using state data. That information in turn informed hiring.

Budtenders should reflect a broad patient population – all ages, ethnicities, orientations and religions. In Hawaii, for example, 65% of patients are older than 40, so age representation and experience were priorities for Aloha Green's hiring team.

There are fewer female medical marijuana patients in Hawaii, but it was important to Cheng that both genders be represented.

"We want patients to see a friendly face when they come in," he said. "We have a varied workforce, and that's something we're so proud of."

The goal is to provide personalized service to patients, and for patients to have a choice of who provides them service. An older patient, for example, might be more comfortable working with an older budtender.

"Our employee demographic helps give our patients a choice of who provided them that service," Cheng said. "We're very focused on that kind of direct marketing and our budtenders' abilities to build close relationships with our patients. We wanted to create an opportunity for patients to identify with budtenders in other ways."

– Joseph Peña



### **Research the Patient Registry and Price Points**

Take the time during a delay to perform valuable market research so you can properly budget and forecast as well as calculate a rate of return for investors. Market research is also helpful to show investors how you plan to compete with the black market, and it can be used to temper investors' expectations. Oahu has an active black market and the lowest number of MMJ patients per capita in Hawaii. Patients on the island can also grow their own medical marijuana or have a registered caregiver grow for them.

Taking that into consideration, it's critical to use a conservative estimate to plan for the number of patients you might serve, Cheng advised. So his team crunched the numbers beforehand to be prepared to go once the market opened.

For starters, look carefully at your

state's patient registry and the total number of patients in your region, and track the registry's growth over time.

The Aloha Green team estimates 50% of Oahu's patients will continue to grow their own product or work with caregivers to supply their medicine, while the dispensary will serve another 20% of the patient population on Oahu. It planned its production appropriately to keep shelves stocked the first weeks and months it opened.

Aloha Green also considered the cost of growing with a caregiver and black-market prices for cannabis when it set its price points. And it considered state regulators' concerns about product diversion.

The average cost of a gram on the local black market is \$15-\$20, so Aloha Green priced its grams at \$15-\$20. But it's difficult to predict how the black market will react and how its prices will compare to



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dispensaries. Already, Cheng said, there have been black-market Craigslist posts advertising \$12 grams.

Median prices in other markets weren't as helpful to setting price points because Hawaii has unique factors that increase the cost of growing – high costs for electricity, water, sewage and shipping as well as a limited number of testing laboratories.

### Use Delays to Prep Your Grow

A successful retail strategy depends on having product to sell. Regulatory delays to cultivation are costly, but you can use them to your advantage.

While you're waiting to get the green light to grow, take the time to run tests on critical systems in your facility and fully prep your cultivation site.

For example, Aloha Green used the

time during delays to:

- Train its team on the seed-to-sale tracking system the state is using.
- Grow non-cannabis crops so it could test humidity settings during watering as well as low- and high-temperature limits.
- Test pest control products and patch air leaks.
- Plan crop genetics and grow schedules to prepare for harvests in multiple grow rooms.

### Take Steps to Retain Talent

If you can, retain talent by avoiding layoffs when a market launch is delayed. It's often easier and cheaper in the long run to keep experienced, trusted employees on board versus hiring new, untested talent.

One strategy to retain your employees is negotiating lower salaries and building incentives into pay.

Rather than let employees go, Aloha Green devised a reduced-hour schedule, allowed employees to keep benefits and encouraged the team to pursue professional development opportunities, including management training and learning about organic grow practices and extraction techniques.

Cheng also stopped hiring but continued accepting employment applications and resumes so he was ready to start bringing new employees on board when business kicked into gear.

"The pool of excellent candidates is only so big and we want to have first shot at them," Cheng said. ♦

## IN-HOUSE LEGAL SUPPORT MAKES A BIG DIFFERENCE

**A**loha Green's not-so-secret weapon to navigating Hawaii's new medical marijuana market is its in-house legal counsel – five lawyers on the executive management team, to be precise.

That means Aloha Green can focus on its execution and growth strategies without worrying about important legal risks in a heavily regulated industry. Uncertainty is more manageable because strategies and business decisions are built on a foundation of legal concepts.

"The benefits of in-house legal counsel are that lawyers know the client intimately and understand both the legal and business consequences of every decision," said Tai Cheng, Aloha Green's chief operating officer.

Aloha Green's in-house counsel has come in handy more than a few times. Cheng shared three:

• **Early-Mover Advantage:** To be first to market, Aloha Green's legal team used a relatively unknown state legislative provision to its advantage. That's a perk of in-house legal advice. The provision allows for permitting exemptions for agricultural buildings and structures for a first production center. The legal team prepared memos and opinions on how to fully comply with the provision while maximizing production efficiency. Aloha Green used the agricultural exemption

in its application, which allowed the company to build its grow sooner than those that didn't rely on the exemption.

• **Privacy:** During the process of applying for a license, Hawaii asked applicants to respond on their ability to check principals and employees of the licensee. The in-house legal team raised issues of privacy and developed a consent and background consent for its employees. The state, in response, modified those forms for use in its background checks and consent forms for marijuana employees.

• **Advertising:** The legal team also identified a flaw in the state's blanket advertising ban. Hawaii had no legal definition of advertising. Instead, it's a general prohibition against advertising by dispensary licensees in all forms of media. Aloha Green attorneys presented legal arguments on what should be considered advertising, taking into consideration patients' rights, community consultation and the First Amendment. This action has moved the conversation forward and could benefit all MMJ businesses in Hawaii, but for the time being, companies are pushing the limits of what constitutes advertising.

– Joseph Peña



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Mold samples from a tested product at Steep Hill Berkeley. Photo courtesy of Elizabeth Peace

# Leaning on Licensees

*Steep Hill's expansion strategy involves partnering with local companies, focusing on consistency*

by Margaret Jackson

**T**he key to building a successful national brand is consistency. But that's a tall order in an industry where it's illegal to ship the main product across state lines.

"You can make Crest toothpaste in one location and distribute it around the U.S and know it will all be the same," said Scott Cathcart, executive vice president of global expansion at Steep Hill Labs, a marijuana-focused science and technology company. "You can't do that with cannabis."

The federal ban on interstate

marijuana shipments means expansion-minded testing companies like Steep Hill typically must either open their own labs in each state or license their processes, name and technologies to on-the-ground partners.

Steep Hill has pursued both strategies while expanding beyond its original location in Berkeley, California – which it opened in 2008 – and discovered that the licensing route is best. The company now has licensees in Alaska, Hawaii, Maryland, Pennsylvania and Washington DC and recently announced license deals in Los Angeles and Arkansas in addition to the three labs it initially opened itself.

The big challenge is ensuring consistency in results. On this end, the company has taken steps to ensure its



**Scott Cathcart** is executive vice president of global expansion for Steep Hill Labs.

Photo courtesy of Elizabeth Peace



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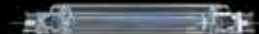
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different labs employ uniform testing practices across the nation. Each lab, for example, follows the same standard operating procedures [SOPs]. That means workers from one lab to the next follow the same practices for sample selection and test preparation. Steep Hill also goes to great lengths to train staffers – including workers at its licensees – and uses technology to ensure technicians across the nation are following the SOPs.

Here's a look at how the company approaches licensing and consistency.

### Finding Local Connections

After initially launching with a lab in Berkeley, California, Steep Hill expanded by opening company-owned facilities in Albuquerque, New

Mexico, and Tukwila, Washington (near Seattle). But it then switched from owning its labs to a licensing model because of the expenses tied to building, equipping and staffing a facility from scratch. It was costing \$1 million-\$1.5 million to establish the most basic lab, said Reggie Gaudino, vice president of scientific operations and director of intellectual property for Steep Hill.

Plus, teaming with somebody already on the ground brought added advantages. "It's all about spreading the footprint with local partners who understand their particular markets," he said. "The right way to do it is to involve somebody who's locally connected and wants to bring the best science in."

The licensees often are teams of doctors, laboratory specialists and health-care experts. When Steep Hill expanded to the East Coast last year, for example, the company licensed its name and technology to a group

of physicians wanting to open a lab in Baltimore. Steep Hill Maryland's CEO is Dr. Andrew Rosenstein, the chief of the division of gastroenterology at the University of Maryland St. Joseph Medical Center.

In other cases, already established cannabis testing labs seek a license agreement from Steep Hill. In those instances, the existing company is rebranded with the Steep Hill name. In Hawaii, for example, Spectra Analytical Lab struck an agreement with Steep Hill and became Steep Hill Hawaii.

What's in it for the licensees? They get to use Steep Hill's:

- SOPs
- Lab software allowing users to manage product samples and related data through a centralized system
- Amazon Web Services cloud-computing platform

### EXECUTIVE SUMMARY

**It's possible to expand a cannabis testing company across state lines – and beyond. Here are some lessons learned from Steep Hill Labs' experience serving multiple markets:**

- You can own your own facilities, but licensing arrangements often are less expensive and can help hasten expansion.
- Determine whether it's best for you to license someone who wants to start from scratch or to find an existing company and rebrand it with your company's name.
- If you choose to rebrand, make it worthwhile for prospective partners by offering as many of your services as feasible.
- Train your licensees' employees to ensure consistency among locations.
- Keep your eyes open for prospective partners, and when you think you've found one, use a thorough vetting process.



**Reggie Gaudino is Steep Hill Labs' vice president of scientific operations and director of intellectual property.**

*Photo courtesy of Preston Gannaway*



**Steep Hill tries to ensure cannabis samples get identical treatment at each of the company's labs.** *Photo courtesy of Steep Hill Labs*

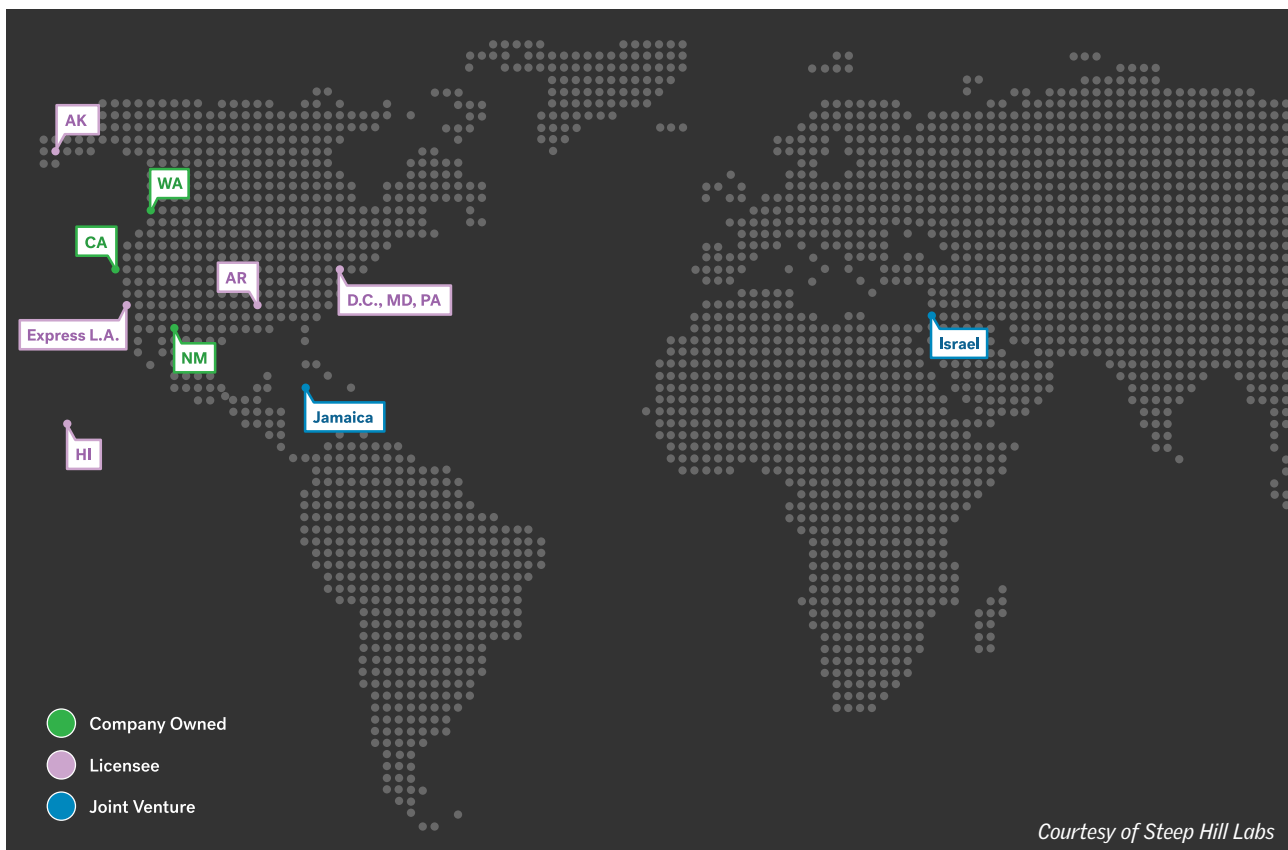


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"Meanwhile, you still maintain complete ownership of your business," Steep Hill states.

### Training for Consistency

Using its senior scientists and business executives, Steep Hill trains staffers at company headquarters or the out-of-state lab.

The goal: Ensure employees and executives know every component of the business, from sample intake to conducting the tests. More broadly, they are trained on everything from science and the law to how to talk to the media.

"No matter what state you go to, whether it's a corporate or licensee lab, the results follow the same methodology," Gaudino said. "Having consistency across states is the only way for a national company to do business. If a company is using

different labs in different states, there's no standardization."

Though the labs may be equipped with machines made by different manufacturers, the training ensures the methodology is consistent. The company monitors its licensees through its lab software – known as Laboratory Information Management System [LIMS] – that connects all facilities to a central data-acquisition center.

"We have very powerful real-time data analysis," Gaudino said. "When the proper sequences are not seen, we can say, 'You need to do that instead.'"

### Partnering Overseas

Steep Hill has begun expanding outside the United States. In March, the company struck a partnership with iCAN: Israel Cannabis – an Israeli medical marijuana company – to establish a testing lab in the Middle Eastern country. Under the deal, iCAN gets access to Steep Hill's scientific know-how, intellectual property, licensing,

genetics and remote testing.

The joint venture came together when Gaudino was attending a conference in Israel, where a speaker from Hebrew University of Jerusalem was outlining the school's goals for the future.

"I asked to borrow the speaker's last slide," Gaudino recalled. "He had listed seven milestones, and we'd already done the first five. We were that far ahead in genetic research in cannabis."

The company was invited back to speak at another conference, which culminated in its partnership with iCAN.

Elsewhere, Steep Hill is working on a deal to launch a lab in Jamaica, where it has a partnership with the University of Technology, Jamaica.

"We have very aggressive expansion plans," Cathcart said. "Licensees seek us out – we have countless inquiries from around the world. We intend to be in every legal market in the world, but we will only go in with the right partner at the right time." ♦



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# How to hire – and train – a security guard

The Cannabis Distribution Company has chosen to scale back the intimidation factor in its security guards' look by eliminating visible guns and exterior vests. Photo courtesy of TCDco



by Bart Schaneman

**W**hen looking to hire a guard for a marijuana company, it's important to consider the environment in which the individual will be working.

Cannabis companies have a clientele that might not take too kindly to intimidating authority figures. So you want to strike a balance between presenting a deterrent to any would-be criminals, but you don't want to scare away your customers, either.

"What we like is people who look like they can handle themselves in a situation that they need to be an authoritative figure," said Michael Julian, CEO and president of MPS International,

a full-service security firm headquartered in Southern California. "But you can't have some ninja-killer Navy Seal standing at the door intimidating people as they walk in."

Here are factors three security company executives consider when hiring for the position, searching for a suitable candidate and training and managing that individual.

## WHAT TO LOOK FOR

A security guard must convey a presence that might make someone think twice about robbing a store, maintain a cool and calm demeanor and view customer service as a top priority.

## Julian first looks for a candidate who served in the armed forces.

His perfect hire would be someone with military experience and, beyond that, law enforcement training.

But someone with that level of experience usually costs more than the \$13-\$16 an hour he can pay.

"The margins in this business are very, very low," he said. "What we would love to get are former Special Forces guys that went to Afghanistan and kicked ass and took names. But we can't pay those guys what they're worth. What we look for and what we get are typically two different things."

Still, Julian's company employs some former military and law enforcement guards.

## EXECUTIVE SUMMARY

**Hiring a guard for your cannabis firm is a crucial decision. Among other duties, guards keep customers safe and protect large amounts of cash. When staffing your firm:**

- Look for veterans who know when to be intimidating and when to provide customer service.
- Use a proven employee's personal network to recommend additional staff.
- Post detailed employment ads on job sites to weed out any fence-sitters.
- Pay close attention to how candidates carry themselves – you want confidence in a security guard.
- Watch for red flags in the interview process, including shifty body language and lack of eye contact.



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"They have the experience to use their head and do it right," he added.

**For Hunter Garth, founder and managing director of Iron Protection Group, based in Denver, a veteran is also the first choice.**

Garth served in the Marine Corps, and he built his business to help veterans transition back into society after serving abroad.

The traditional security model is to have a person who is a visible deterrent, Garth said. He won't stray from that model if that's what a customer wants, but his preference is to find a guard who will complement a dispensary's sales model.

"The largest and most important metric is how you carry yourself and how you communicate," Garth said.

"You don't have to look like a bouncer. People who look like cops don't help customers purchase cannabis. We don't ever want to look overbearing. I never want people to carry themselves like they're a badass."

Iron Protection Group's security guards carry guns and wear company shirts, and that's typically deterrent enough, he added.

**Chad Holtman, director of security for The Cannabis Distribution Company (TCDco), a Portland, Oregon-based security transport firm, also gives preference to veterans.**

"We're dealing with a Schedule 1 drug. We have firearms. And we're moving product that's worth a lot of money," he said. "Protecting marijuana is strangely fitting for a lot of these guys."

He believes the skillset his guards gained in the military makes them well-suited to the job, specifically their attention to detail, ability to follow a process and strong response to a more disciplined structure.

But he's had to dial back the intimidation factor with his guards' appearance. They started out wearing exterior vests and a gun on the hip, a very tactical-looking uniform.

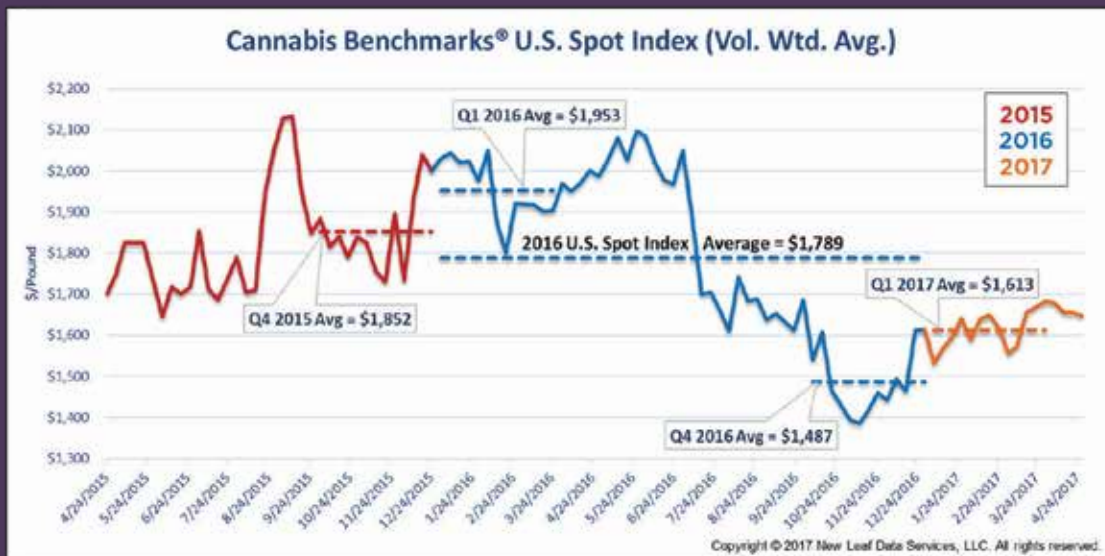
"The industry didn't like that," Holtman said. "It made them nervous. The initial thought when they walked in would be, 'Oh, man, we're being raided by the DEA.'"

The company had to take a step back and "just chill out. A lot less Department of Defense and a lot more cannabis industry standards."

Now, the company's guards wear

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**Iron Protection Group doesn't believe a security guard must "look like a bouncer" to be effective.** *Photo courtesy of Iron Protection Group*

their vests underneath hooded sweatshirts and conceal their guns.

### WHERE TO LOOK

While trolling job boards and posting employment ads online can help you find a guard, the tried-and-true method of word-of-mouth referrals works as well as anything.

### Julian recruits by asking proven employees for recommendations.

"When we have good officers, we ask them, 'Do you know any like-minded, like-skilled people that you would recommend?' That's the best way to get quality people," he said.

Otherwise he advertises on Craigslist, ZipRecruiter and Indeed. When writing an employment ad, you want to be specific about the job duties, necessary qualifications and the company's expectations, Julian said.

"It weeds out the people who are just looking for any job they can get," he added. "If they have any doubts about their qualifications, then they're not going to apply. And that's good, because that's a mis-hire and that saves us time."

### Garth takes a similar approach.

He recruits using Indeed and Monster, but most of all, Iron Protection Group uses the principle "that one good veteran knows another good veteran."

His company's name has been out there for a while and he doesn't have trouble sourcing guards, he said.

### Holtman likes to post detailed job ads on sites like Indeed, Monster or LinkedIn.

He said he gets better resumes if he recruits on these job-specific sites rather than a site like Craigslist.

### HOW TO TRAIN AND MANAGE

Making sure your employees know what's expected of them from Day One is one of the easiest ways to position your security guards for success.

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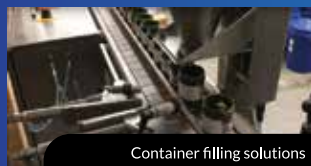
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**Julian of MPS International not only trains his guards what to do on the job, he teaches what not to do.**

"If you don't tell them, they will likely do the wrong thing at some point because no one told them not to," he said.

When it comes to management, he added, "people that will work in a lower-wage-paying industry are typically not self-starters or two-step thinkers, so close management is necessary to keep them on point and on task."

**Garth's Iron Protection Group's philosophy on training and managing guards is relatively simple.**

"Treat everyone with respect, draw the parallels between my past and theirs so that we identify with each other, teach the importance of the nuances, remain firm but always fair," he said.

He employs the age-old theory, "the devil is in the details."

"I want my guards to understand

that the details matter. How they present themselves at work, to tactical positioning at work and everything in between, ultimately it leads to a better product. The better the product, the more opportunities we have to hire veterans, the closer we are to our overall mission," he added.

**Holtman of TCDco views training as a vital part to providing a quality security service.**

"Anybody can strap a holster on their hip and claim to protect something. But to have an individual with the ability to confidently navigate the endless liability and human risk in the security industry is another idea," he said. "I do not believe there is such a thing as 'too much training.' There should be training in threat detection and defusal, physical training and upkeep, weapons handling, medical/trauma training, vehicle operations, understanding applicable laws, scenario-based training, inspectable

item checks (licenses, certs, gear, etc.) and much more. "

His philosophy for management is placing an importance on trust, empowerment and surefootedness.

"A firm needs to be able to trust the people they hire to make good decisions," Holtman added. "When the decision to hire and trust has been made, then be sure to trust. If the unfortunate day comes that the trust is broken, the firm needs to separate itself."

He believes it's the duty of the manager to strike a balance between encouragement and trust.

"When overdone, you may wind up with an overconfident, ego-driven individual who cannot make wise choices," Holtman said. "When underdone, you may have the complacent security guard who rolls into work and punches the clock, disengaged. However, when done correctly, you are left with an employee that stands strong, determined and professional." ♦

## HIRING RED FLAGS

**P**ay attention to body language, obvious warning signs on resumes and a sense of entitlement when weeding out candidates for security guards.

Any kind of criminal history is a big no-no, said Michael Julian, CEO and president of full-service security firm MPS International. You also want to flag an employment history that shows a candidate has jumped around from job to job in recent years.

During an in-person interview, Julian watches for any indication of deception such as lack of eye contact or fidgeting in a chair.

Not dressing appropriately for the interview is another sign an interviewee isn't serious.

"Appearance is very important," Julian said. "You should be in as nice of an outfit as you own."

Hunter Garth, founder and managing director of Iron Protection Group, sees too much entitlement in the younger generation of would-be security guards.

"Believing that because you were at some level in the military means you somehow deserve it here" is

a dealbreaker, Garth said. "I don't care if you were a general. If you come into this company, you're starting at the bottom."

If an applicant's resume shows no security, law enforcement or military background, Chad Holtman, director of security for The Cannabis Distribution Company (TCDco), backs away.

During interviews, Holtman notices candidates who stand up straight with shoulders back and chins out.

"In private security," he said, "body language, perception, helps to portray not a soft target."

He also looks to see if candidates have done their homework and know TCDco's history.

"That just tells me that they care and they want to be here," he said.

In other words, you want your candidate to appear fully committed to the job.

"The repercussions could be dire if something goes wrong and poor decisions are made," Holtman said.

— Bart Schaneman



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A portrait of Jennifer Hanser, a woman with long, wavy, light brown hair, smiling at the camera. She is wearing a dark top. The background is a soft-focus cityscape.

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New York-based Pollen Gear focuses on designing packaging that helps increase a company's brand identity.  
Photo courtesy of Pollen Gear

# Industry Snapshot: Packaging Companies

## Data, trends and challenges

by John Schroyer

**P**lastic bags are out. Custom art jobs on brand-specific packaging are in.

That may be a bit of an exaggeration – yes, the majority of marijuana packaging still consists of generic pop-top bottles that cost only a few cents apiece – but cannabis packaging has grown into a very big business in a few short years.

That growth stems in large part from strict state-mandated

packaging regulations that generate needs for child-resistant packaging, exit bags and precise labeling, to name a few. Plus, each type of cannabis product has its own packaging needs.

Such requirements have driven demand for companies that have been willing – and able – to adapt quickly to changing regulations, and a few of those companies have dominated the market for several years.

But some newer companies, and even a few that have been around for a while, are starting to sense an opening in brand identification.

That means an even newer niche market within cannabis packaging has emerged: custom designs whose aim is to set a cannabis brand apart from its competitors.

Some estimate the number of packaging businesses range from fewer than 10 large companies and



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distributors, like Kush Bottles and [Marijuanapackaging.com](http://Marijuanapackaging.com), to a few dozen smaller specialty packaging firms. And more seem to be joining their ranks every month as the overall industry continues to grow into new states and, thus, create more demand for packaging.

[Marijuanapackaging.com](http://Marijuanapackaging.com) generated \$8 million in sales in its first year, 2013, according to Ricky Yuan, the California company's managing director.

"The second year it grew to \$15 million, and the third year it went to \$24 million," he said. "And we're on our fourth year, so you can see how fast that went."

### Market Dynamics

Most packaging companies aren't as big as Yuan's [Marijuanapackaging.com](http://Marijuanapackaging.com), which is a clearinghouse with roughly 3,500 different products for sale at volume. A subsidiary of A&A Packaging, [Marijuanapackaging.com](http://Marijuanapackaging.com)

now claims to be a "one-stop shop" for cannabis companies in need of various supplies.

California-based Kush Bottles, founded in 2010, has achieved big numbers as well, having pulled in about \$8 million in revenue for the 2016 fiscal year, said CEO Nick Kovacevich. That's an increase of about \$4 million from the previous fiscal year for Kush, which hit \$3 million in revenue in the second quarter of 2017.

Like [Marijuanapackaging.com](http://Marijuanapackaging.com), Kush deals in volume with about 2,000 different products available for wholesale, including around 800 in the packaging category (the rest are ancillary marijuana products, such as smoking devices).

"We're now more than a packaging company, and we offer accessories and services, anything from gloves to lighters to pipes," Kovacevich said. "We really got to the point where we sell to anywhere on the supply chain."

New Jersey-based Stink Sack – another legacy packaging company that was formally launched in 2013 after having been the founder's "side project" for three years – recently rebranded as Dymapak in early 2017 and is also broadening its customer base. The company is much smaller than Kush in terms of offerings, however, with only about 45 different products for sale.

"Our entire strategy is based off supplying these producers directly

### EXECUTIVE SUMMARY

**Marijuana packaging has evolved into a multimillion-dollar-a-year business for many companies in the space. Here are some takeaways about the sector:**

- There are fewer than 10 true market leaders in packaging, but several dozen smaller companies specialize in niche areas, such as custom design packaging.
- Though the majority of sales are still made up of generic pop-top bottles and the like, demand is increasing for custom packages that will help brands set themselves apart from competitors.
- Larger packaging suppliers are beginning to diversify their offerings and, thus, are becoming one-stop shops for their customers.
- Constantly changing regulations related to packaging and labeling are still one of the biggest hurdles for marijuana container firms.



**Marijuanapackaging.com uses packaging samples to advertise its products.**  
*Photo courtesy of [Marijuanapackaging.com](http://Marijuanapackaging.com)*





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**Kush Bottles, one of the largest packaging businesses in the space, carries a wide variety of containers for businesses to choose from.**  
*Photo courtesy of Kush Bottles*

with custom packaging,” said Dymapak CEO Ross Kirsh, who noted the company’s sales have doubled every year since 2013 and broke into the millions in 2014. “That’s our bread and butter – customizing packaging for people.”

Other newcomers to the market have a similar approach because cannabis packaging is essentially the only market left for packaging firms that don’t already have an established customer base and hundreds – if not thousands – of cheap wholesale products to sell to retailers and product manufacturers nationwide.

“The only way to differentiate your brand is really in packaging,” said Ed Kilduff, the founder of New York-based Pollen Gear, which launched in November 2016 and offers about 14 products.

Each of Pollen Gear’s products, Kilduff stressed, are customizable. Pollen Gear’s business strategy focuses on higher-end companies that won’t mind spending a bit extra on packaging, as long as it’s a high-quality product that furthers brand identity.

“The industry has been used to getting cheaper and cheaper and cheaper, so anybody can go on Alibaba and buy the cheapest little pill

bottle and slap a label on it,” Kilduff said. “The big challenge for us was to change [the industry’s] perception and convince them that, ‘If you’re really trying to sell premium flower, you’re going to have to spend a bit more on packaging.’”

That’s why Pollen Gear contracted with a professional comic book artist – who has X-Men and Deadpool comic credits to his name – to put

together a custom-designed line of glass packages for high-end flower. To Kilduff, that’s the future of cannabis packaging.

“Everything is customizable. We can put a label on it, we can do digital printing, we can do custom color of the plastic,” Kilduff said. “The stuff we have is truly a blank canvas.”

He’s not alone. [Marijuanapackaging.com](http://Marijuanapackaging.com)’s Yuan, Kush’s Kovacevich and Dymapak’s Kirsh all believe packaging is going to play a central role in brand identification in coming years, so their companies have invested significantly in custom packaging departments.

“That is a division that we noticed that’s growing extremely fast. And everything is done in-house,” Yuan said, referring to [Marijuanapackaging.com](http://Marijuanapackaging.com)’s custom work department. “A lot of business customers want to differentiate themselves from their competitors.”

However, for larger companies like Yuan’s, the custom-to-generic sales gap is still enormous. Yuan said only a “small subset” of customers currently are willing to pay for custom designs. “It’s like 5% to 95%,” he said.

**Kush Bottles founders Nick Kovacevich, right, and Dallas Imbimbo. Photo courtesy of Kush Bottles**



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"We do such high volume in generic child-resistant containers and accessories, that carries the vast majority of our business."

### **Business Hurdles**

The biggest obstacle for packaging companies is the same as it's been for years: regulations that are in constant flux. And these days, companies must factor in the differences in regulations across the country, given that roughly a dozen states have either legalized medical marijuana or seen their markets come online in the past two years.

"The biggest challenge of course is regulatory," Kirsh said. "The government loves to put rules in place and then a few months later change them up."

Such moves, whether it's requiring updated labeling or new child-resistant formats, can cost packaging companies – or their customers – thousands of dollars.

"We've heard from many of our customers that they'd like to order as little as possible, like a couple hundred units every two weeks, because the language changes all the time in the packaging," Kilduff said. "So, if they buy four months of inventory and, all of a sudden, the state of Washington changes the law, they have to change it or throw it out."

Several companies have also had to deal with widely differing customer demands depending on the state regulations in which they operate. Products that sell well in Colorado, for instance, may not be nearly as popular in Washington or Oregon.

"Every state is different, but because we're ready for a wide variety as it stands, as states open up, we're ready for them," Yuan said. "That challenge is something that's a lot smoother now."

On top of the regulatory changes, demands from customers have

changed as well, Kovacevich said. That's kept Kush Bottles on its toes when it comes to satisfying client needs.

"The other thing that's really changed in the last two years has been the product segment mix, where we have a situation where concentrates and oils and these different form factors are rapidly taking over the shelf in terms of market share, and decreasing the pure raw cannabis flower that's being sold, or your traditional types of edibles like brownies and cookies," Kovacevich said. "Our portfolio has had to evolve as well, because you can't package a gram of crumble (wax) or a half-gram of oil the same way you would package flower."

### **TRENDS TO WATCH**

#### **Child-Resistant Dominance**

State-mandated, child resistant packaging has been a trend in the industry for several years, and it shows no signs of abating. That means any company that wants to either enter the space or ramp up its presence will almost certainly deal, at some level, in child-resistant packaging.

"My prediction is that within a couple of years, [the entire industry will] go the way of Colorado, and only require child-resistant packaging," Kirsh said.

#### **Custom, Custom, Custom**

Customization is the basic upshot of the highly competitive business of marijuana packaging. While plenty of companies have come and gone in recent years within that particular niche, more are being founded every year, and older businesses that still dominate the market are also exploring custom production.

Some, like Pollen Gear, have even structured their business models around that trend.

"We're really going to see – not just us – people really spending money on design, combining child-resistance with real art," Kilduff said.

### **Environmentally Friendly**

Recyclable packaging is something that pretty much every executive has gotten an earful about at one point or another. And while it's not yet a reality, many are hard at work trying to figure out how to produce recyclable, child-resistant and cost-effective packaging.

"That's really the holy grail right there," Kilduff said.

He also pointed out that "people hate the plastics business. They think it's all environmental waste ... Most of the packaging right now is in plastic, because it's hard to make child-resistant packaging out of glass."

### **Competition, Mergers and Acquisitions**

The packaging business is made up mostly of niche players like Dymapak and Pollen Gear, and Kush's Kovacevich believes many of those companies will soon be bought up, especially in another year or two when newer adult-use markets start to flourish the way Colorado's has.

And while there will be competition, Kovacevich said, he's more concerned about traditional pharmaceutical packaging companies getting into the business than he is smaller operators. So his hope is that the market will contract and allow some of the bigger operators, like Kush and [Marijuanapackaging.com](http://Marijuanapackaging.com), to get even bigger – a situation that would then give them more of a solid competitive edge for a longer run into the future.

"The bigger driver for competition will be the California and Nevada marketplaces. When people start to see the amount of sales ... when there's actual seed-to-sale tracking, that's when people are going to go, 'Holy crap, this market is huge,'" Kovacevich said. "We see a lot of these smaller companies being really ripe for acquisition targets." ♦

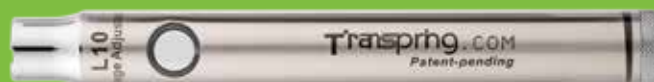




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# Wheelin' & Dealin'

Recent deals, acquisitions and other announcements from North American cannabis companies

by Omar Sacirbey

## Kodiak Launches Accelerator

Leading cannabis investor **Kodiak Capital Group** is backing a new marijuana accelerator that launched in July at Kodiak's San Diego office. The accelerator will provide startups with capital and a professional network of mentors and service providers. The first accelerator class will have three companies and is set to run for 90 days, from July 1 to Sept. 30. After completing the accelerator class, each participating company will receive \$100,000 in exchange for 5% equity. A second accelerator class is expected to follow shortly after the first session finishes.

The accelerator is seeking:

- Private cannabis companies looking to expand through mentorship and investment.
- Private companies seeking to go public.
- Private companies wanting to be built up and prepared for an acquisition by, or merger with, a current public cannabis company.



## NY Acquisition Puts iAnthus in Five States

New York-based **iAnthus Capital Holdings** – which owns, operates and partners with licensed cannabis operators in four states – signed a binding letter of intent to acquire 100% of **Valley Agriceuticals**, which has received

conditional approval from the New York State Department of Health to secure one of the state's 10 medical marijuana licenses.

The proposed acquisition, when closed, will expand iAnthus' portfolio to five states.

Under the binding letter, iAnthus will acquire 100% of Gloucester Street Capital and its wholly owned subsidiaries, Valley Agriceuticals and Valley Agriceuticals Real Estate, for \$17.3 million, which includes \$2.3 million payable in cash and \$15 million payable in common shares of iAnthus priced at \$2 per share.

## Oregon Holding Company Acquires Nevada Cultivation License, Pursues One in Canada

Oregon-based **Golden Leaf Holdings**, a cannabis oil solutions company, closed on the acquisition of a cultivation license and an extraction license in Nevada from **NevWa**, which does business as **Grassroots**. The purchase price consists of \$2.1 million payable in cash. NevWa's cultivation and extraction license allows for the distribution and sale of products across Nevada.

Golden Leaf has also entered into an agreement to acquire all outstanding shares of **Medical Marijuana Group Corp.**, which has applied for a federal cultivation license in Canada. The purchase price is 10 million Canadian dollars [\$7.6 million], which will be satisfied through the issuance of 35,714,286 common shares of the company at 28 cents per share.



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## LSU Picks Nevada Firm to Run Medical Cannabis Program

**Louisiana State University** selected Las Vegas-based **GB Sciences** to run the school's medical marijuana program, one of two in the state. Under the arrangement, GB Sciences – a vertically integrated marijuana firm that specializes in medical cannabis cultivation and extraction – is required to make a minimum \$3.4 million contribution or a 10% commission on gross receipts to the LSU AgCenter. The Nevada company, which trades on the over-the-counter markets, also must make a \$500,000 annual investment in the university's research on plant varieties, compounds, extraction techniques and delivery methods. The state won't spend any money on the estimated \$10 million undertaking.



**Mirth Provisions' products will be available in California under a partnership with Indus Holding Co.**  
*Photo courtesy of Mirth Provisions*

## Northwest Infused Beverage Maker Partners With California Holding Company

**Mirth Provisions**, an infused product marijuana company whose sparkling tonics and sublingual products sell in Washington state and Oregon, formed a manufacturing and distribution partnership with **Indus Holding Co.**, a California cannabis distributor. The deal went into effect in July and allows California retailers to order Mirth products.

## Infused Product Manufacturer Lands License

**P&B Labs Humboldt** received a cannabis manufacturing license from the city of Eureka, California. P&B is the manufacturing affiliate of Papa & Barkley California, maker of MMJ wellness products. P&B will expand the operation of its Eureka manufacturing facility from R&D to non-volatile manufacturing to produce the solvent-free, all-natural oils and cannabis rosin used to create topicals, tinctures and transdermal patches. P&B Labs will also produce high-quality, solvent-free oil and rosin to partner with companies seeking pure cannabinoids for infusion in edibles and other wellness products.



**P&B Labs Humboldt, producer of Papa & Barkley products, has entered into an agreement with the city of Eureka, California.**

## OrganiGram Finalizes Clinic Acquisition

**OrganiGram Holdings**, a federally licensed medical marijuana producer in New Brunswick, Canada, finalized its acquisition of **Trauma Healing Centers**, which has seven locations serving 3,000-plus patients. The clinic plans to open seven more locations. The acquisition was made with OrganiGram's issuance of 719,425 shares at 2 million Canadian dollars (\$1.5 million) or CA\$2.78 per share.



## Aphria Partners With Local Labor Union

**Aphria**, a federally licensed cannabis producer in Ontario, Canada, is partnering with **Labourers' International Union of North America Local 625** to be the "primary provider" of medical cannabis to members in Essex and Kent counties. Local 625's membership equates to more than 1,600 eligible dependents who will have immediate access to full coverage for certain medical cannabis products under the Aphria brand.



## Canadian Cannabis Firm Partners With Quebec Town on Massive Grow

**MYM Nutraceuticals**, a Canadian company that acquires federal medical marijuana production licenses, signed an "exclusive deal" with the municipality of **Weedon, Quebec**, to build a 1.5 million-square-foot cannabis production facility consisting of 15 greenhouses, each totaling 100,000 square feet. When the project is completed and licensed, it would be one of the largest grow operations in the world, with the potential to produce over 150,000 kilograms of cannabis per year.

This is a first-of-its-kind partnership where a municipality has partnered with a cannabis company to build a major production facility, MYM said. Under the agreement, Weedon will purchase the 329 acres of land for MYM to build the project on. **CannaCanada**, a Montreal-based cannabis company that is 75% owned by MYM, signed the agreement. When the project is complete, MYM will own 90% of CannaCanada.

## Canadian Licensed Producer Added to Stock Index

The Ontario, Canada-based **Maricann Group**, a federally licensed greenhouse producer of medical cannabis, has been added to the Horizons Marijuana Life Sciences Index ETF. The HMMJ debuted on the Toronto Stock Exchange on April 5, 2017, and is the first exchange-traded fund that will offer investors direct exposure

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to North American-listed stocks that are involved with biopharmaceuticals, medical manufacturing, distribution, bioproducts and other ancillary marijuana businesses.



### **Toronto Concentrates Company Gets Nevada Contract**

**Gilla Enterprises**, a subsidiary of Toronto-based developer of cannabis concentrate products Gilla, entered into a production and distribution licensing agreement with **Alternative**

**Medicine Association**. Alternative, a Nevada-licensed medical marijuana establishment, was recently acquired by Friday Night Inc., a Canadian-based public company.

Under terms of the licensing agreement, Gilla will grant Alternative an exclusive five-year license to produce and distribute Gilla's concentrate products in Nevada.

### **Nevada Cannabis Company Lands Management Contract**

**Grow Contractors**, a consulting group owned by mCig, a medical cannabis products distributor in Henderson, Nevada, signed a management contract to staff and manage a 15,000-square-foot indoor cultivation facility in Las Vegas for **R.H. Medical**. Grow Contractors has brought on an experienced cultivator for the project.

### **New Compliance Group Launches**

The **National Association of Cannabis Businesses** (NACB) launched with hopes of offering U.S. cannabis companies direction in responsible business practices that include compliance, transparency and accountability. The self-regulatory organization plans to assist its members in developing consistent national standards and to provide them with the expertise, tools and services needed to effectively run their businesses.

The NACB will be headed by President Andrew Kline, who served as an assistant U.S. attorney and as a senior adviser to former Vice President Joe Biden. The association is composed of marijuana businesses that include Buds & Roses, Cresco Labs, Etain, Green Dot Labs, Local Product of Colorado, Matrix NV and Mesa Organics.

### **International Standards Group Tackles Cannabis**

Pennsylvania-based **ASTM International**, a not-for-profit that has developed professional standards for a host of industries, signed a memo of understanding with the **American Herbal Products Association** to partner on a set of professional standards for the cannabis industry. The herbal products group will play a supporting role while ASTM will take the lead on crafting actual standards.

### **A New Certification Group Launches**

The **Organic Cannabis Association** and **Ethical Cannabis Alliance**, non-profit organizations based in Denver and Portland, Oregon, respectively, have merged to form the **Cannabis Certification Council**.

The council will independently certify cannabis products as "organically grown" and "fairly produced." Producers that are certified will receive seals for marketing products. Certification will be conducted by third-party experts to ensure integrity. The soap company **Dr. Bronner's** has committed to provide seed funding and a matching grant to the CCC. And Dr. Bronner's director of constructive capital, Les Szabo, will take an initial board seat.

Founding board members include: Laura Rivero of Yerba Buena Farms; Amy Andrie of L'Eagle Services; Nick Richards of Dill and Dill and Vicente Sederberg; and Ben Gelt of Par. Fellow founder Ashley Preece of the Ethical Cannabis Alliance will serve as executive director.

### **HelloMD Takes Small Donor Route**

San Francisco-based **HelloMD** raised more than \$900,000 from more than 600 investors on the crowdfunding platform SeedInvest and also received \$200,000 from SeedInvest's Selections Fund. HelloMD – an online medical cannabis community that provides educational resources and helps connect patients with doctors – launched the campaign in May.

### **Packaging Company Opens Terpene Lab**

**Kush Bottles**, a packaging company in Santa Ana, California, has opened a new product development and genomics lab in San Diego to produce terpene formulations.

### **Colorado Biotech Company Readies Products for Market**

Colorado-based biotech company **Next Frontier Biosciences** announced plans to launch "a suite of purified cannabinoid products" for the medical and adult-use marijuana markets in Colorado in the third quarter of 2017. Next Frontier produces Verra Wellness cannabis products that include nasal mists, sublingual



**David Bronner is CEO of Dr. Bronner's, which is providing seed funding and a matching grant to the Cannabis Certification Council.**

*Photo courtesy of Dr. Bronner's*



**Next Frontier Biosciences, maker of Verra Wellness products, is planning to produce purified cannabinoid products for Colorado's adult-use and medical cannabis sectors.** *Photo courtesy of Next Frontier Biosciences*



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sprays and topical salves. Next Frontier's goal is to be active in 10 legal state markets by 2020.

#### **Biotech Firm Gets \$4 Million For Cannabis Research**

**Axim Biotechnologies**, a cannabinoid research and development firm in New York, secured \$4 million in funding for clinical trials on the treatment of irritable bowel syndrome, pain and spasticity in multiple sclerosis. Axim also will use the money for a study on creating an alternative to Marinol using a patented chewing-gum delivery system.

#### **Patient Advocates, Pharmacy School Partner on Training**

The **Patient Focused Certification Training Program** unveiled its new training platform via the **University of Maryland School of Pharmacy's** online learning platform. The partnership will focus on helping MMJ businesses access certified training courses.

The program is designed to meet training requirements

for the 30 states with legalized medical cannabis, as well as Washington DC, Puerto Rico and Guam.

#### **Trade Group Targets New Jersey, Pennsylvania**

The **American Trade Association of Cannabis and Hemp** announced that New Jersey will be the next state where it will push for cannabis legalization. "We are targeting New Jersey because we believe it is the next big piece of the legalization movement," said Michael Bronstein, political consultant for ATACH.

The group, along with Pennsylvania's MMJ license winners, also announced the formation of ATACH's Pennsylvania Coalition of Marijuana License Holders, a trade group. ♦

*Have a company announcement you want us to consider? Send a press release or general information to [OmarS@MJBizDaily.com](mailto:OmarS@MJBizDaily.com). [Note: We're looking for news about expansions, financing, deals, partnerships and similar developments, not product-related announcements.]*

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# Movers & Shakers

**A look at some recent hiring moves in the marijuana industry**

*by Omar Sacirbey*

## **Mason Tvert Leaves MPP for VS Strategies**

VS Strategies, the lobbying and public affairs arm of the Denver-based Vicente Sederberg law firm, hired one of the best-known faces in marijuana advocacy, **Mason Tvert**. Tvert left the Marijuana Policy Project after 13 years as communications director to work with VS Strategies as vice president of public relations and communications.



Mason Tvert

Tvert, 35, has been stationed in Denver, where his new firm has an office on the same floor as his old advocacy group. That's fitting, considering the two organizations have worked together on various projects over the years, and Tvert said he expects that relationship to continue.

Tvert joined MPP after graduating from the University of Richmond and was put on a two-week lobbying campaign. He became MPP's communications director in 2012, and in 2013 the Denver Post anointed Tvert as Colorado's "Top Thinker" in politics and government.

Making the switch was motivated partly out of a desire for change and new opportunities.

"It was time to start working on some new angle to the marijuana policy issue," Tvert said. "It's the next step for me in my career path."

While Marijuana Policy Project and VS Strategies have similarities, there are fundamental differences:

- MPP is nonprofit; VS Strategies is for-profit.
- MPP must knock on people's doors; clients knock on VS Strategies' door.

Tvert likes the idea of having more contact with industry leaders as well as the opportunity to take on more decision-making responsibility.

"At MPP I may not have been involved in certain levels of decision-making," he said, "or because it was such a large staff, I was providing communications assistance on certain projects but not deeply involved in certain areas."

He added, "I'm also quite interested in the possibility of doing some non-marijuana-related work in the future. It may not be for some time, but there's potential for it. And that intrigues me because I've been working on this issue since I got out of college."

## **Western Law Firm Nabs Regulatory Compliance Expert**

DR Welch Attorneys at Law, a cannabis-focused law firm with offices in California and Nevada, hired attorney **Alexandra Stupple** as a partner in its Sacramento office. Her practice will focus on state cannabis regulatory compliance.

Before joining DR Welch, Stupple was an attorney at the California Department of Public Health after serving as an attorney with the state's Bureau of



Alexandra Stupple



Marijuana Control in its Department of Consumer Affairs. While she was an attorney with the bureau, she drafted regulations under the Medical Cannabis Regulation and Safety Act and Adult Use of Marijuana Act.



Jack Ham

#### **NFL Legend Joins Pennsylvania Grower**

AgriMed Industries, a Carmichaels, Pennsylvania, medical cannabis cultivation company, tapped Pittsburgh Steelers Hall of Fame linebacker **Jack Ham** as a spokesperson. In that role, Ham will talk about the benefits of medical marijuana as well as AgriMed's economic and job creation impact.

#### **OrganiGram Makes Two Key Hires**

OrganiGram, a federally licensed producer in Moncton, New Brunswick, hired **Jeff Purcell** as vice president of operations. In that role, Purcell will oversee the facility's production, engineering and maintenance, construction, quality assurance, safety, security and the company's oil and extract products. Purcell most recently served as vice president of operations at Ganong Bros., a chocolate and candy company, and he spent 15 years in senior leading operational roles at McCain Foods.

OrganiGram also appointed **Larry Rogers** as vice president of business development and special projects. Rogers will no longer be an officer of the company, but instead will develop international opportunities and other

peripheral business interests for the company.

Both Purcell and Rogers will report directly to OrganiGram CEO Greg Engel.

#### **Las Vegas Cultivator Names Bocskor Vice Chairman**

GB Sciences, a Las Vegas-based medical marijuana cultivator, appointed **Leslie Bocskor**, the president of the cannabis-focused advisory services firm Electrum Partners, as vice chairman. Bocskor, a director at GB Sciences since May 2016, has been instrumental in the company's capital formation process and in its relationship with its investment bank, Network 1, which has raised more than \$14 million for GB Sciences.



Leslie Bocskor

#### **ICC Makes Leadership Transitions**

ICC International Cannabis Corp., a federally licensed producer and distributor of medical and recreational cannabis and cannabinoid extracts based in Vancouver, British Columbia, promoted **Alejandro Antalich** to CEO and appointed **Diego Taranto** as senior financial controller. The company also announced that **Guillermo Delmonte** stepped down as CEO.

Antalich joined ICC in March as senior operations manager overseeing all research and development team initiatives.

The company is transitioning from an early stage licensed producer to a fully licensed producer and distributor of recreational cannabis in Uruguay.

#### Plant Specialist Joins THC Biomed

THC Biomed International, a Vancouver, British Columbia-based, federally licensed cannabis producer, appointed **Ashish Dave** to its board of directors. Dave has a Ph.D. in plant tissue culture and a master's degree in botany. He previously consulted for THC.

#### New Leader for National Legal Group



The National Cannabis Bar Association hired attorney **Chris Davis** as executive director. A member of the California and New York bars, Davis moved to the NCBA from Practical Law, a Thomson Reuters company, where he spent five years and finished as senior editor of the practical law finance team. He also worked in securities litigation in New York.

#### CBD Company Hire Reflects International Ambitions

Medical Marijuana Inc., a CBD and hemp oil producer in San Diego, appointed **Alex Grapov** as international vice president. Grapov's first priority will be to open the Medical Marijuana Inc. subsidiary Kanna-way LLC's Kannaway Europe operation. The European expansion is expected to be operational by the fourth quarter of 2017.



#### Financing Firm Makes Two Key Hires

Cannabis Wheaton Income, a Vancouver, British Columbia-based firm that provides funding to cannabis businesses in exchange for shares of the company, appointed **Hugo Alves** to president and director and **Michael Lickver** to executive vice president of strategy. Both are members of Cannabis Wheaton's advisory board.

Alves is currently a corporate and commercial partner at the Bennett Jones law firm, where he founded and built the firm's cannabis group. Lickver is currently a

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corporate and commercial associate at Bennett Jones, where he helped build the firm's cannabis group.

#### Financing Firm Gets Temporary President

Marapharm Ventures, a Kelowna, British Columbia, firm that invests in cannabis companies, appointed **Brian Lovig** as interim president. Lovig is the founder and facilitator of Marapharm and has been a consultant to Marapharm and is familiar with its current projects and personnel.

#### Packaging Company Hires Terpene Expert

Kush Bottles of Santa Ana, California, appointed **Wayne Green** as director of science and innovation. With Kush, Green will oversee development of terpene-based products as well as the company's terpene knowledge base and online marketplace, TerpsonTerps.com.

Before joining Kush Bottles, Green co-founded Trinity Terpenes, where he led the creation and development of authentic terpene profiles. He also previously led a team of scientists at Yulex in a genomics



breeding program, helping develop a natural biocide that utilized terpenes and leading field trials showcasing the product's potential as a replacement to synthetic pesticides.

#### Drug Developer Gets New Board Member

Tetra Bio-Pharma in Ottawa, Ontario, appointed **W.M. "Bill" Cheliak** to its board of directors. Cheliak is CEO of Panag Pharma, a Canadian-based biotech company focused on the development of cannabinoid-based formulations for pain treatment. He also serves as a director for Solarvest.

#### New CFO for Cannabis Branding Company

Cannabis Sativa, a branding and marketing firm in Mesquite, Nevada, has hired **Donald J. Lundbom** as chief financial officer. The firm's former CFO, Carolyn Merrill, will continue with the company as controller. Lundbom will oversee the company's business systems and operational procedures, budgeting, financial analysis and general oversight of financial reporting. ♦

*Hired or promoted someone for a senior-level position? Send a news release or general information to [OmarS@MJBizDaily.com](mailto:OmarS@MJBizDaily.com)*



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# Arizona

One of the largest MMJ markets in the nation, Arizona's cannabis industry has continued to grow at a strong, steady pace, with nearly 27,000 patients joining the program in 2016. Driven by a young, largely male patient base, a record 29 tons of cannabis products were sold over the course of the year – a 53% increase over 2015. Growth has not slowed so far in 2017, and if current trends persist, the program could surpass 150,000 patients by the end of the year.



Main measure	Proposition 203
Year passed	2010
Cannabis business regulations	Heavy. Applicants must go through an extensive application and licensing process, and businesses are subject to regulation of all aspects of operations. Stand-alone, wholesale cultivation operations are prohibited. Dispensaries must grow their own medical cannabis, though they are permitted to transfer excess marijuana to another licensed dispensary. Stand-alone, wholesale infused product manufacturing is also prohibited. The state limits the total number of licenses available, most of which have already been awarded. Officials periodically assess whether the license limit needs to be amended.
Home cultivation	Yes, but only by patients (or their caregivers) who live more than 25 miles from a registered dispensary
Sampling of state medical marijuana licensing fees	<b>Registration Certificate:</b> \$5,000 <b>License Renewal:</b> \$1,000
Number of registered patients	125,991 (as of April 2017)
What to watch	<p>The state awarded 31 new dispensary licenses in fall 2016, and many of those operations could go online in 2017. That will increase access for patients and likely help spur growth, but it will introduce new competitive pressures on existing businesses.</p> <p>After a measure to legalize recreational cannabis failed at the ballot box in 2016, advocates are preparing another adult-use ballot initiative for 2018. Those efforts will likely kick into high gear in the second half of 2017.</p>



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**"I get significant interest from Israelis, I get the Dutch, I get the Canadians. I get everyone from all over wanting to participate."**

– **Khurshid Khoja**, founder of Greenbridge Corporate Counsel and founding board member of the California Cannabis Industry Association, on the widespread interest he's seeing in California's recreational industry.

*Source: Marijuana Business Daily*



**"They wanted to have people from out of state who have proven that they have done it in other states."**

– **Judith Cassel**, a marijuana-focused attorney at Cannabis Law PA, on why Pennsylvania regulators allowed nonresidents to seek medical MJ business licenses.

*Source: Marijuana Business Daily*



**"The more that we can show we're responsible, the more likely we're going to be able to expand this industry. To get to the billions of dollars of market potential that this industry has in front of it, transparency (and) standardization are keys to realizing the potential."**

– **Tim Keogh**, cannabis consultant and CEO of Denver-based AmeriCann, on the significance of two standards groups - ASTM International and the National Association of Cannabis Businesses - trying to influence the marijuana industry.

*Source: Marijuana Business Daily*





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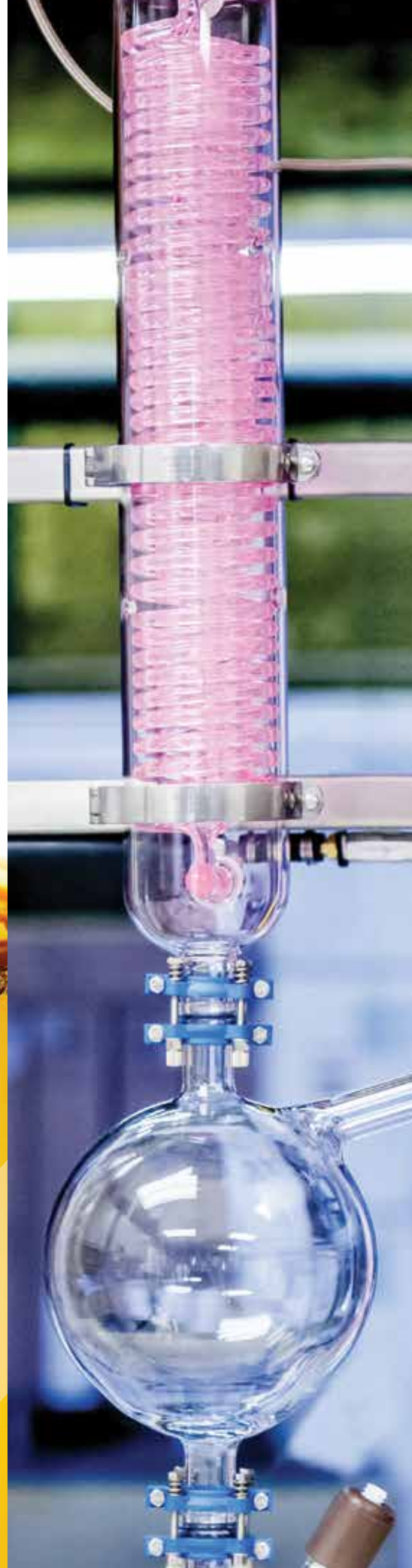


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