The Troubles With Testing

The absence of industrywide testing standards and federal oversight on labs leaves cannabusinesses vulnerable to legal, financial and business threats
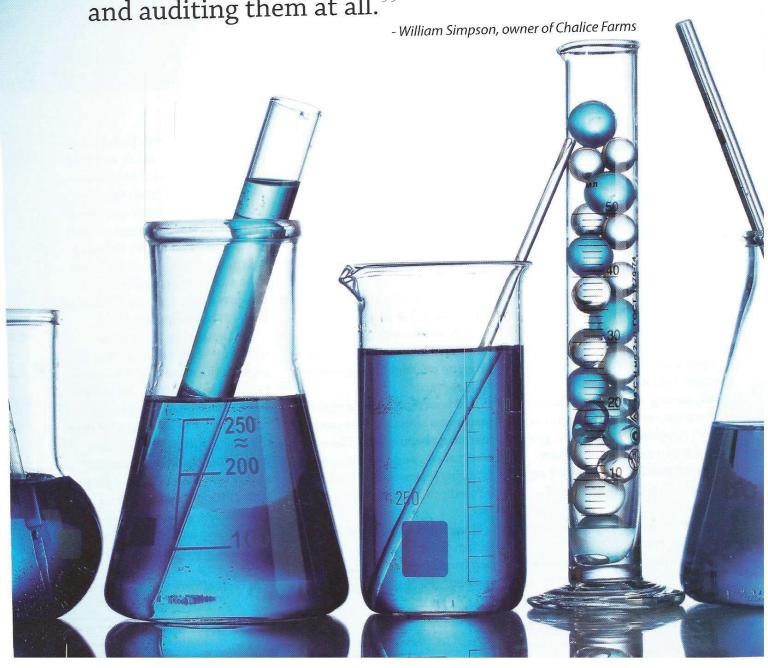
by Tony C. Dreibus

WILLIAM SIMPSON VIEWS the proliferation of marijuana testing labs that have popped up across the country in recent years with a mix of optimism and concern.

On one hand, it's a positive sign that shows the industry is maturing and striving to become more legitimate, said Simpson, the owner of Chalice Farms, which has three dispensaries and a medical marijuana grow in Oregon. On the other hand, it's extremely worrisome considering the lack of testing regulations in some states, the absence of industrywide standards and the fact that there's no federal oversight.

"I could take $150 from a grower and try to run a pesticide test or a cannabinoid profile and say it passed or it didn't. That's horrific. It's really scary to me. Nobody is going through and auditing them at all."

- William Simpson, owner of Chalice Farms

A scientist preps a work station at Steep Hill Nevada's lab.

In Oregon, for instance, requirements for testing cannabis seem arbitrary. The laws governing the industry in the state say that marijuana must be tested for certain impurities such as mildew, mold and pesticides, but nobody is actually enforcing those rules, Simpson said. Nor does the state offer guidance on methodology, equipment or tool calibrations testing labs should use.

As a result, almost anybody can open a lab, charge a set fee and begin running tests without actually having to prove they know what they're doing, Simpson said.

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That's just the tip of the iceberg when it comes to problems with the current state of cannabis testing.

Without set standards for the industry as a whole, labs use different procedures, equipment and methodologies. Testing results therefore often vary greatly – even among labs that are based in the same state (or even city) and operate under the same general regulations. The situation is even more perilous in states that don't mandate testing, as there's often no oversight or regulations whatsoever.

This has created an extremely precarious situation that puts marijuana businesses – from dispensaries and recreational cannabis stores to cultivators and infused products companies – at risk.

These businesses could face serious legal issues and a backlash from the general public if a patient or consumer gets sick from marijuana with high levels of pesticides, heavy metals or other impurities. Lawsuits might materialize if potency levels listed on labels are off the mark and someone unknowingly consumes more THC than intended. By the same token, if potency levels are lower than advertised consumers and patients might feel cheated and go back to the black market.

The perception of cannabis could therefore take a serious hit, slowing the movement's momentum and jeopardizing the public support marijuana businesses have worked so hard to build over the years. Just as importantly, if the industry doesn't hammer out its own standards and people start getting sick, the federal government will likely jump in aggressively and establish heavy regulations without input from the industry.

Several efforts to establish

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> *- Jeanne Mensingh, president of Labtopia*

standards and improve the situation are underway and show some promise. But time is of the essence: Observers say it's a matter of when – not if – something goes seriously wrong, and the industry could pay a steep price as a result.

"Either somebody will have a complaint or somebody will get sick," said Jeanne Mensingh, who has more than 25 years of experience as an analytical chemist and lab manager, and serves as president of Labtopia, a Houston-based quality control and assurance consulting group. "The Food & Drug Administration will move in, especially if there's a death or a multitude of people getting sick, and they will put in a bunch of regulations."

National Picture

Traditionally, very few growers, dispensaries and edibles companies tested their products. The tide has turned quickly, however.

The Ogden Memo of 2009 was the initial spark that ignited a mini boom in testing laboratories for cannabis in the U.S. That, and the ensuing Cole Memo in 2013, led to a green rush in the cannabis business and gave lab operators enough confidence that they wouldn't be arrested for openly accepting marijuana from cannabis companies.

At the same time, there's been a big push by states in recent years to require cannabis testing. In fact, testing has become a requirement in most new states that legalize medical or recreational marijuana, and several existing markets that didn't require it before have gone back and made it mandatory.

A handful of states – such as California and Michigan – essentially ignore the issue of testing, as they don't have extensive regulations on MMJ businesses in general. In these markets, labs have still cropped up. But in many cases they are completely unregulated, and business owners decide whether they want to spend the money to check potency levels and test for safety issues. Most opt not to.

There are serious issues even in states with testing regulations. In Colorado, for example, the state inspects laboratories before allowing them to conduct tests on cannabis. To receive a state license, labs must meet certain personnel, quality control, security, chain of custody and reporting qualifications, according to the state's Marijuana Enforcement Division. Labs must have manuals outlining standard operating procedures and show they can retain specimens responsibly.

Yet many business owners in the state are wary of the lab results they receive. While testing is mandated for the recreational industry in Colorado, the type of equipment and methodology labs use isn't standardized, resulting in different processes and standards, and therefore varying results from labs.

A 2014 study by the Denver Post found huge differences in the amount of THC reported on the labels of edibles products vs. the actual amount they contained. Some of that likely resulted from inconsistencies by edibles producers. But it also reflects the problems with testing in general, as infused products companies claimed the results from the lab used for the Post's study differed from the results of the labs they used.

The same issues prevail in other MMJ states with testing regulations as well.

Industry Discord

Lawmakers, industry experts, lab operators and cannabis business owners have sparred over

Julie Berliner, the owner of Colorado-based edibles producer Sweet Grass Kitchen, said testing is worth the price despite high costs, though she would like to see some type of standards put in place.

which tests and standards are comprehensive yet cost-effective and fair. Finding common ground has proved elusive, and organizations that have tried to create overall standards and certification programs are struggling to gain widespread adoption.

A major concern for companies is cost – testing isn't cheap. Businesses don't want to pay for it if they're uncertain about the reliability of the results, nor do they want to shell out money to get certified from an upstart standards program that hasn't been widely adopted.

There are also deep

disagreements on who should actually pay for testing: growers, infused products companies or retailers? Growers are the obvious choice for testing since they actually produce the product, but in the food industry everybody from the farmer to the retailer has to pay up. That's how it is in Colorado. Edibles-maker Julie Berliner, the owner of Sweet Grass Kitchen, said because she producers, processes and sells her infused products, she pays three times for testing.

It's expensive, she said, but in her opinion it's worth the price.

While testing labs thus far have

provided questionable results, the science is improving, said David Cunic, the CEO of Pazoo, a testing company with operations in Colorado and Nevada and, soon, Oregon. But he acknowledges that the lack of standards has led to some shady laboratories offering services without a lot of knowledge. That's why there needs to be standards put in place in each state, and it must be mandated by lawmakers, he said.

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The Cost of Lab-Tested Cannabis

by Tony C. Dreibus

Cannabis testing may be mandated in every state soon, and it's easy to see why: It brings much-needed credibility to the industry and can prevent legal troubles for business owners.

It can also be quite costly, however.

While prices vary depending on several factors including location and the breadth of the assessment, costs can run as high as $500 per test. That's no small amount considering that many businesses must check dozens or even hundreds of batches of flower, processed cannabis or infused products each month.

When it's all said and done, a business can shell out tens of thousands of dollars – and sometimes more – a year.

With such high costs, coupled with the fact that results often differ depending on the lab used because of a lack of industry standards, it's no wonder some businesses are forgoing testing in states where it's optional.

Julie Berliner, the owner of the Denver edibles company Sweet Grass Kitchen, grows her own marijuana, which she processes into cannabutter and turns into cookies and brownies that contain from 10 to 100 milligrams of THC.

Because testing is mandatory in Colorado, she's required to separately test the marijuana, cannabutter and edibles she produces.

At $120 a test, the costs can add up, Berliner said.

William Simpson, the owner Chalice Farms in Portland, Oregon, which has three dispensaries and a cultivation facility, said he spends about $140 a pop for tests. Given that he needs about 30 tests a month, Simpson is shelling out around $50,000 annually.

"We carry 30 strains and every batch that comes in needs a new test ," he said. "It's a huge expense."

Aside from the cost, he also faces the loss of the plants he submits for testing, an expense that can't be written off because of Internal Revenue Service tax code 280E, further cutting into his profit margin.

Both Berliner and Simpson said they agree on the need for tests but would prefer if there were some sort of standards in place to ensure that the money is well-spent.

If standards or certification were mandated, it would give both business owners and customers confidence that products are safe, Berliner said. She said while the costs can be prohibitive, they're well worth it to maintain the integrity of the industry and ensure consumer safety.

"I'm willing to pay that kind of money to prevent any possible harm on the consumer level," she said. "It's the price we pay" to do business in the marijuana industry.

" Now that the standards are there, the most push-back we see on people becoming ASA-certified is they don't want to pay for it. Sure, it costs money. But what costs more money is losing everything on your shelf and getting sued because you don't know what's in your product. **"**

- Steph Sherer , founder and executive director of Americans for Safe Access

frustrated," he said. "That's why we need the states to come in and say 'these are the standards that you need to follow.'"

Some businesses feel the costs, unreliability and hassle are worth it regardless.

From indoor cultivators who have 15,000 plants to outdoor growers who refuse to use any chemicals on their plants, they all think their buds are the best, and they want some sort of test that can prove it. Sellers want to be able to tell their customers they have the best products on their shelves.

"We met with some smaller growers, and they're saying 'we want testing because we know we make a great product,'" Cunic said. "They say it levels out the playing field (against the large commercial producers). The dispensaries want to be able to say 'we only sell high-quality products,' and say they can sell more because of that."

Others simply want to be able to charge more for their products, especially if they feel they're selling higher-end cannabis than their competitors. Cunic said he compares high-quality cannabis to high-end orange juice – buyers are often willing to pay $4 for a quart

of Tropicana orange juice versus $2 for from-concentrate orange juice.

"When you have a better product, you can increase the price," he said. "And consumers are willing to pay a little more because they don't want to put a price on their health."

State Solutions

The absence of standards is not for a lack of trying, however. Several states have attempted or are attempting to implement laws to regulate and standardize testing, though it's unlikely the U.S. will have any sort of industrywide standard any time soon, observers say.

Colorado passed a bill this year requiring testing of medical cannabis after the state previously mandated only testing of recreational marijuana. The new law requires tests for contaminants that are "deemed to be public health hazards by the Colorado Department of Public Health and Environment based on medical reports and published scientific literature."

The law is vague, at best, and requires that the state's licensing body put in place standards by the time it takes effect on July 1, 2016.

It also says independent labs must verify potency and present a cannabinoid profile for each test.

In June, Nevada implemented a policy telling medical marijuana growers which pesticides they can use and the limits for each, using Environmental Protection Agency guidelines. For pesticides, for example, the state policy requires independent labs to use a mass spectrometry pesticide analysis test using a combination of both gas chromatography and liquid chromatography methods.

Marijuana that tests above the lowest allowable levels will not pass, and the state is authorized to collect and destroy those batches of marijuana that fail. The rule also says if a lab detects an unusual spike in pesticide activity, it must further investigate the cannabis it's testing. If the grower believes the test to be inaccurate, however, he or she can request one retest.

While Colorado and Nevada are attempting to tackle the complicated task of testing standards, Oregon is looking at certifying the labs themselves – which could be a huge step forward for the industry and a blueprint for other states.

Oregon law should say all

Scientists with Steep Hill Nevada work in the company's Las Vegas lab.

laboratories must be certified under the International Organization for Standards (ISO) 17025 rule that pertains to testing facilities, said Chalice Farms' Simpson. The internationally recognized certification is given to labs deemed technically competent.

It requires a quality management system within each laboratory as well as correctness and reliability of each test and calibration performed in the facility. In other industries, regulatory entities will often not accept tests from labs that don't have the certification.

Simpson thinks every state that has legalized cannabis should require labs to be ISO 17025 certified because it's an internationally recognized standard.

"We don't think we created the best testing standard (in Oregon), we just said `let's incorporate inarguably the best international standard and everybody can agree it's a good standard to go with,'" he said. "Each state can have its own governing body, but if everybody gets on board with the ISO standard," there's a chance for an industrywide standard.

Looking to Herbal Products

Those in Oregon aren't the only ones who think outside standards are the way to go

Steph Sherer - the founder and executive director of Americans for Safe Access (ASA), which promotes safe and legal access to cannabis for therapeutic use - said states should adhere to criteria set by the American Herbal Products Association (AHPA).

These standards work well in the cannabis industry, she said, because they cover products including foods, beverages and dietary supplements made from herbs, similar to marijuana.

In 2010, AHPA formed a cannabis committee and partnered with Sherer's organization. Two years later, the first standards for cannabis were issued, along with dispensing guidelines. Cultivation guidelines followed a year later, along with criteria for laboratories.

The guidelines stipulate, for example, that pesticides used in cultivation operations must meet EPA tolerances, nutrients must be "appropriate for use in food production" and equipment used to test marijuana must be accurate and adequately maintained. The guidelines were modeled after recommendations covering food products and dietary supplements, and also include standards on everything from training workers to packaging.

In 2014, ASA launched a certification program for medical marijuana businesses incorporating AHPA's guidelines. Under the program, dispensaries, cultivators, laboratories and other cannabis

participating companies can get a seal of approval they can use in their marketing materials and on their packaging, conceivably giving them a leg up over competitors who aren't certified.

Adoption has been slow, however, thanks to the cost of the certification, which runs from $5,000 to $20,000 a year, depending on the size of the operation and other factors.

"Now that the standards are there, the most pushback we see on people becoming ASA-certified is they don't want to pay for it," Sherer said. "Sure, it costs money. But what costs more money is losing everything on your shelf and getting sued because you don't know what's in your product."

Medical cannabis patients, especially, shouldn't be subjected to toxins that could worsen their conditions, which is why testing needs to be mandatory and standards need to be set, she said.

"We have this really fun mystery experiment every time we go to buy our medicine," Sherer said. "Governments aren't making them test. People keep asking why we don't have standards in this industry, but we already do."

Some industry leaders are attempting to work with lawmakers and government officials on testing regulations. In July, a group of cannabis business professionals met with 20 attorneys general from across the country to discuss issues surrounding the marijuana industry. The industry leaders and the attorneys general agreed that they need to work together to develop a "Code of Responsible Practices" that will lay out a framework for regulations, possibly including those related to testing.

Karen White, the executive director of the Conference of Western Attorneys General, which played host to the meeting, said it's very much in the best interest of the industry to work on getting standards in place.

"In terms of the direction the (attorneys general) are going, what we are saying is, give us your best suggestions. Get yourselves organized. Get a self-regulatory body in place, or the alternative may not be as appealing to you," White said.

Hope Floats

For the foreseeable future, testing will be governed by a patchwork of rules varying by market, with each local lawmaking body – whether it's a health or agriculture department – having control over the laws in their respective states.

Pazoo's Cunic said he expects some states will implement heavier testing-related regulations soon, but whether they'll help shore up consistency issues and other problems is yet to be seen.

While there are differences in opinion about what cannabis-testing standards should look like, most people agree that it's just a matter of time before every state puts them in place.

Labs will need to be certified by a state or outside agency, and potency and toxin levels will be scrutinized and refined over and over to ensure what consumers are ingesting - whether through inhalation or consumption of edibles or drinks - are indeed safe.

ASA's Sherer said she hopes people in the industry look past just their wallets and realize that most, if not all, legitimate industries have standards in place to ensure consumer safety. The cannabis space should be no different, she said.

"We have to be mindful that we're part of a grand experiment, and the only way you're allowed to continue with that experiment is you don't cut corners," she said. "Testing isn't unique to cannabis. If you want to be a part of this industry, and you want to sell something to be consumed by humans, then these are the basic rules of doing business in the U.S." 🐾

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