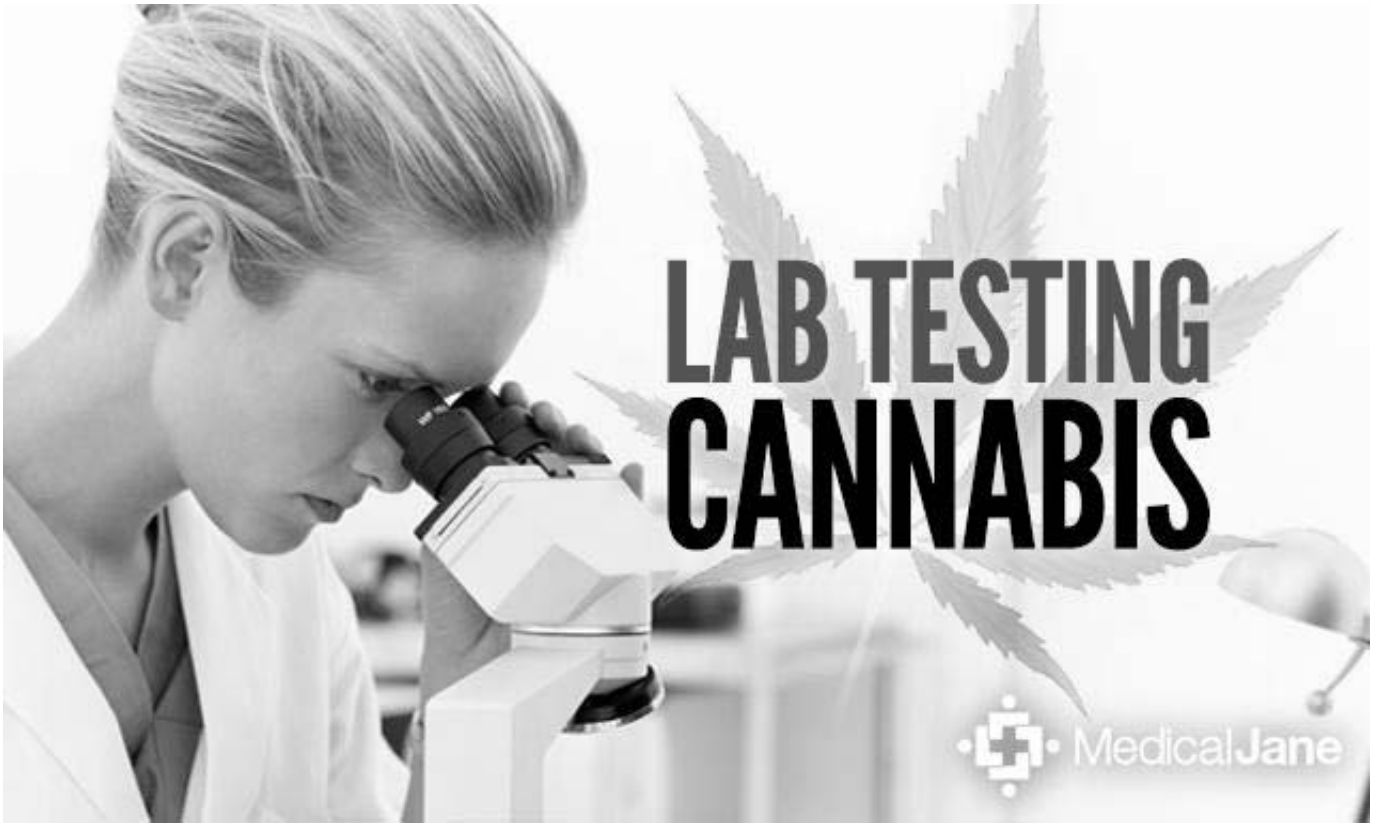

Should patients expect dispensaries to test their cannabis? The simple answer is yes. After all, would you ever accept your primary care physician handing you an unlabeled bottle of pills and telling you, "Good luck, hope this helps!" You would have no way of knowing how much to consume or how it would affect you. Of course, nobody has ever overdosed on Cannabis (physically impossible), but the safety requirements and care that goes into the finished products should be no different. In addition, lab testing would provide information on contaminate, fungus and moisture levels in cannabis in order to ensure only quality products are given to patients.

A few private laboratories have recognized that fact and are in the process of building the foundation of medical cannabis by lab testing thousands of samples and recording all of the data. They offer lab testing to dispensaries, collectives, growers, edible companies and a few BHO connoisseurs here and there (anyone who is willing to pay the price). Lab testing Cannabis, in all of its processed forms, contributes to developing a useful database that can be **used as a reference point when seeking certain medicinal benefits**. In other words, if your caregiver knows the concentrations of certain cannabinoids in their products, they will be able to decide which strain or edible will be most beneficial to the patients.

Medical Jane encourages all medical marijuana dispensaries to begin testing all of their products before giving them to their patients. We believe that this simple step will help to legitimize the industry, and will ensure that patients are receiving medicine with the care and attention it deserves. Now don't get us wrong, we are not comparing the safety of cannabis and prescription pills, or saying that the two should be treated the same. If you took your pill bottle of cannabis home and consumed the whole thing, nothing is going to happen. Do the same with your prescription from the doctor and there's a good chance you'll end up in the hospital or dead.

Current Methods of Lab-Testing Cannabis

High Pressure Liquid Chromatography Leads The Way

When a sample is submitted to the lab for testing, the facility will typically conduct a visual inspection using a High-Magnification Dissecting Microscope for any molds or visible contaminates. The samples are then ground up, and solution is added to separate cannabinoids from the plant matter. Once the cannabinoid solution can be extracted from the sample (free of plant matter), it is run through a **High Pressure Liquid Chromatograph**. This is the key piece of equipment in the potency testing procedure.

Gas Chromatography & Thin Layer Chromatography Uses Heat To Test

While there are many ways to test cannabis, High Pressure Liquid Chromatography (HPLC) is currently the most widely accepted method. Other techniques include **gas chromatography (GC)** and **thin layer chromatography (TLC)**. HPLC is preferred over GC because it does not apply heat in the testing process, allowing cannabinoids to be measured in their naturally occurring forms. This means acidic (CBD-a, THC-a, etc.) and neutral cannabinoids (CBD, THC, CBG, CBN, etc.) can be differentiated and enumerated in a sample.

> **"High Pressure Liquid Chromatography (HPLC) is preferred over Gas Chromatography (GC) because it does not apply heat in the testing process, allowing cannabinoids to be measured in their naturally occurring forms."**

When testing cannabis with a gas chromatograph, heat is applied to the sample. This causes acidic cannabinoids and many pesticides to change their structure, rendering them impossible to detect. Therefore, this machine is only able to tell you the amount of neutral cannabinoids in a sample.

The amount of acidic cannabinoids is extremely important and should not be forgotten, especially in products such as edibles and tinctures. This is because acidic cannabinoids have not been activated yet in these products; that is left for your digestive system to do. For this reason, most reputable labs use HPLC as their core testing method.

Mass Spectrometers Help Test For Pesticides

In addition to testing for cannabinoid content, many labs utilize **mass spectrometers (MS)** to test for pesticides. The machine is able to detect many other types of particles through a heating process similar to GC. Gas Chromatography units equipped with mass spectrometers and thermal conductivity detectors (TCD) have proven to provide dependable lab results as well. This method is known as 'Gas Chromatography-mass spectrometry'.

Real-time Polymerase Chain Reaction Testing

Another technique that has been utilized to test cannabis is called, "**real-time polymerase chain reaction (PCR)"**, which can be used to quantify the amount of certain molecules in a sample. The machine pinpoints precise quantities of fungus, yeast, mold or bacteria in a sample, while simultaneously quantifying targeted DNA molecules. When used correctly, these machines are able to determine strain lineage, or even count the number of specific terpenes present in a sample. While other methods of testing may take days or weeks to produce results, real-time PCR machines provide test results in less than an hour!

Lab Testing Is About Finding What "Cannabinoid Profile" Works Best For You!

Every sample that is submitted to laboratories for testing is registered into the lab's database. Each test result reports a different **"cannabinoid profile"** that lays out all percentages of active cannabinoids, as

well as any bacteria or fungus that was found in the sample.

A lot can be determined about the care that was put into growing or producing the sample by looking at a cannabinoid profile. For example, if a test result reports a higher level of THC-a than THC, this will tell you that the grower probably did not give the buds enough time to cure. On the other hand, if an edible shows high levels of THC with no THC-a, it may indicate that the producer cooked the edible at too high of a temperature, degrading the cannabinoids to their neutral state.

Another cannabinoid reported on the profile is Cannabinol (CBN). The compound is a breakdown product of THC, and is not produced in the course of the plants natural life cycle. Therefore a large presence of this cannabinoid in a profile indicates that the buds were cured for a little too long.

> "**The important thing to understand is that all of these cannabinoids interact with each other in a cooperative manner."**

For this reason, each patient will have preferences for certain cannabinoid ratios; which is why cannabinoid profiles are so important. Even though a patient may think their favorite strain is **Blue Dream**, the cannabinoid profile may vary from batch to batch, resulting in different medicating effects every time. **What the patient actually enjoys, is the strains cannabinoid profile.** For this reason, it is important for a patient to record the effects from cannabinoid profiles (in addition to strain names), and use the information found in test results as a reference point for choosing your next purchase. This will allow you to pinpoint the exact cannabinoid ratios that work best for you, and may lead you to find **other strains** that match your preferred cannabinoid profile other than that **Blue Dream** you love.

Patients Are Demanding A 'Higher' Standard of Care

Ultimately, it is the patient's right to know what is in their cannabis or edibles, whether it's mold or **CBD**. These tests help the patient easily manage their personal experience with the plant, and eliminate the guessing game that was involved in managing dosages previously. We strongly encourage all dispensaries to begin lab testing their cannabis before distributing it to patients.

While we do not think that this should be a requirement until nation-wide standards are put in place, we do believe that dispensaries that do not test their cannabis will be weeded out. As equipment for testing cannabis becomes more widely available, the cost will significantly reduce, and dispensaries will be able to run their own quality control for little cost.

This is not about putting more regulations on an already overly-regulated industry. This is about ensuring that everyone is receiving the quality cannabis they deserve (free of contaminates, molds, pesticides etc.), and helping patients find a cannabinoid profile that works to help their condition. However, this starts with the patients demanding it of their dispensaries. Ask your cannabis provider if they lab test their

medicine, and if they don't, ask them to start doing so.

(8) Comments
Leave a reply...
What is your e-mail address?
What would you like to say?
Submit
thedude
Posted 5 months ago
Seems to be lots of inaccuracies in this article. GC can indeed give acid and neutral forms however someone with chemistry knowledge is needed to run it, showing that the author lacks this knowledge or did not do nearly enough research.
Helpful 0 Not Helpful 0 Flag
Reply
fred
Posted 9 months ago
Is the lab 17205?
Helpful 0 Not Helpful 0 Flag
Reply
caterpillar killer
Posted 9 months ago
Had a caterpillar infestation and found garlic solution on line to kill eggs. How will that effect testing with the various methods?
Helpful 0 Not Helpful 0 Flag
Reply
ORGNKID
Posted 10 months ago
This doesn't even touch on the synergistic effects of terp complexities.
Not to mention these synergistic effects are different from person to person.
THC and CBD are just part of the equation.
And personal use is the best test. Labs are dishonest and unstable in their reported results. The only thing a lab can really promise is the THC/CBD ratio. The percentages are bull.
Helpful 0 Not Helpful 0 Flag
Reply
Gilbert
Posted a year ago
I am a medical marijuana in Canada. I purchased from licensed medical marijuana producer. my first or consisted of two items.

Item 1 - would not burn when inhaled unless a lit lighter was held to it whn inhaled. I returned it and recieved a credit.

Item 2 - burned but failed my quality test.

Crush the ashes of smoked marijuana and smear them on a paper towel.
If the stain produced is anything but light grey you have been smoking fertilizer (contaminants). The darker the stain the more contaminants.
Every product I received failed the test.they did not use pesticides on any crop. so the residue must have