Most legitimate cannabis and hemp companies form relationships with third-party testing laboratories. Independent chemists test their products for cannabinoid content, terpene content, and contamination levels, and the data collected is made available to retailers and consumers.

In theory, independent labs should offer an additional degree of transparency to the industry, guaranteeing that product labels are truthful and accurate. To prevent consumer rip-offs, many retailers will only sell products from companies that provide information obtained from non-affiliated testing labs.

The increasing reliance on third-party testing laboratories is a positive development for the industry. A more savvy and informed buying public is anathema to Illicit retailers, who can't provide similar assurances.

But the use of independent laboratories does raise an important question. How can consumers be sure that independent testing labs are reliable? In other words, who is testing the testers?

Testing the Testers

While many cannabis and hemp labs have good reputations and a solid history of quality work, the increase in demand for third-party testing data does leave room for doubt. A recent FDA study of hemp-derived products found significant variations between product label claims and the actual contents of CBD products sold by different retailers, which suggests that the industry's increasing reliance on third-party testing hasn't eliminated the problem of false or deceptive labeling.

Motivated by concerns over quality control, the National Institute of Standards and Technology (NIST), an official agency of the U.S. Department of Commerce, is launching a project that will, in fact, "test the testers." Laboratories involved in cannabis and hemp product testing will be recruited to participate in this project, which will measure their ability to produce precise and accurate results when evaluating controlled samples.

The Cannabis Quality Assurance (CannaQAP) initiative will "help laboratories accurately measure key chemical compounds in marijuana, hemp, and other cannabis products," NIST declared in a July 2020 press release. "The program aims to increase accuracy in product labeling and help forensic laboratories distinguish between hemp, which is legal in all states, and marijuana, which is not."

As this statement reveals, hemp-derived CBD products are currently a primary concern for government regulators.

By law, CBD products are supposed to contain only trace amounts of THC, the psychoactive ingredient in marijuana. If they contain more, they would be classified as marijuana and would be illegal to sell. Sloppy practices could result in CBD oils that are overloaded with THC, which is one reason why reliable, independent testing of cannabinoid levels is so crucial for CBD manufacturers, retailers, and consumers.

Despite its name, the Cannabis Quality Assurance program will focus exclusively on hemp oil at first. This is precisely the type of product that supposed to be high in CBD but low in THC (below .3 percent, the upper threshold of "contamination" as established by federal law).

Under NIST guidelines, pre-prepared samples of CBD oil with carefully measured percentages of CBD, THC, and 15 other compounds will be sent to laboratories that volunteer to participate in the program. Each will have the opportunity to analyze those samples, prepare a detailed report on the contents, and return it to NIST, which will publish all the results it collects (along with the correct data so that comparisons can be made).

While each laboratory's results will be published, the names of each lab will be concealed. The idea is to show how accurate the industry is in general with its testing procedures and to give laboratories valuable feedback about how close they are to meeting industry standards.

"Anonymity means that labs don't have to worry about how their performance will be viewed," explains NIST project researcher Melissa Phillips. "Our goal is to help labs improve, not call them out."

NIST will share information anonymously and privately with participating labs, so they can see for themselves which testing procedures faired most favorably in the experiment—and make the proper adjustments if their protocols were incorrect or faulty.

Signing up for the NIST program is easy. Interested labs have until August 31st to register, which they can do online at no charge.

Given the anonymity associated with the program, and the lack of any fees or consequences for poor performance, the NIST initiative should prove popular. Cannabis and hemp testing laboratories have nothing to lose by participating, and a lot to gain from the feedback they will receive.

The Future of CannaQAP

This first exercise is only the beginning of the CannaQAP initiative, which will broaden its scope in the years ahead.

The initial round of testing is expected to take between six months to a year to complete, meaning results should be available sometime in the second half of 2021. A second testing exercise will commence sometime after that, to see how much progress participating labs have made at improving their methodology.

Eventually, testing exercises will be expanded to include raw plant material evaluations. This is important for hemp cultivators since the law requires the complete destruction of hemp fields with plants that are found to contain more than .3 percent THC. Over time evaluations of terpene levels and contamination levels in controlled samples will be solicited as well, which should be an easy adjustment since most independent labs are already measuring these characteristics.

While the CannaQAP program will be restricted to hemp, for now, NIST anticipates expanding it to cover cannabis product testing in the future. They plan to move beyond oil to test a complete range of hemp and cannabis product forms, including extracts, concentrates, distillates, and edibles.

A Frosty Relationship Warms?

Ultimately, cannabis and hemp consumers will benefit the most from improved laboratory testing performance.

"When you walk into a store or dispensary and see a label that says 10 percent CBD, you want to know that you can trust that number," declares NIST chemist Brent Wilson.

In the current climate, most CBD purchases are taking place online, but the concept is valid regardless of where the CBD product is sourced. The situation is more fraught with risk in the online environment, where unscrupulous sellers can list their items for sale on Amazon or other lightly regulated outlets with little chance of detection.

The NIST initiative signals the government's understanding that hemp and cannabis are here to say and that staying on the sidelines is not an option. This type of constructive engagement represents a vast improvement from the recent past, when the government's reflexive hostility to all things cannabis precluded mutually beneficial collaboration between regulatory agencies and the industry, despite changing public attitudes and the ongoing evolution of cannabis's legal status.

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