

Tips for Launching a Modern Cannabis Testing Lab

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Demand for cannabis testing services continues to climb as more US states and countries around the globe implement regulated adult-use markets. The cannabis testing sector in the US, like many facets of the cannabis industry, is challenged by the complexity of working with a federally illegal but state-regulated commodity, along with recent labor shortages and investor hesitancy.

To help guarantee a successful launch of a cannabis testing lab, careful consideration should be given to the key attributes below.

Secure proper funding

Clearly there is substantial capital required to launch a cannabis testing laboratory. Upfront costs such as facility build-out, instrument and equipment acquisition, software implementation, payroll, and other operational overhead all amount to a considerable investment. Avoid underestimating the necessary funding runway needed to overcome setbacks that delay licensure. Payroll overhead prior to revenue generation should be factored into the equation.

A trained team in place, ready to hit the ground running when operations commence, will pay dividends by meeting client turnaround time expectations from the start.

Know your state

Understand the implications of your specific state's regulations. The types of tests required, including the action limits associated with those tests, will dictate the instrumentation necessary to conduct testing for cannabis products accordingly. State requirements vary widely, from the number of pesticide analytes screened, the types of microbes assayed, or whether the laboratory must send authorized personnel to collect test samples from licensees.

Research the competition

Launching a new laboratory in a state with pre-existing cannabis testing labs that are already operational presents an opportunity to learn from these predecessors. What are the known challenges for laboratories operating in the same state? How much do they charge for their services? Are additional testing services available from those labs, beyond the scope of state requirements?

Cannabis producers and manufacturers often have testing needs that are not covered by typical state mandates. For example, state regs typically do not address testing of inputs to the manufacturing process, such as soil, water, and nutrients for cultivation, or raw ingredients for edible products. As more licensees pursue alliance with protocols that enable adherence to good manufacturing practices (GMPs), input and in-process testing will become more commonplace. Preparing to meet these needs now will avoid a scramble to catch up in the near future. The cannabis industry evolves at breakneck speed, and understanding the trajectory is crucial to staying relevant in the space.

Choose built-for-purpose facilities

The green rush mentality of the cannabis lab testing industry prioritizes the race toward revenue generation above all else. Hence, cannabis labs pop up in less-than-ideal places, from office buildings to warehouses, regardless of suitability for conducting lab operations. Retrofitting office space for lab purposes can pose challenges, such as upgrading existing air handling systems to exhaust excess heat generated by equipment. Another common facility upgrade involves increasing the power capacity in cases where electrical demands exceed available amperage supplied to the building. Cannabis testing generally requires the operation of multiple mass spectrometry instruments, with associated vacuum pump electrical pull, in addition to the mass spec itself. Add multiple fridges, freezers, and incubators for microbiology, and the demand for power quickly increases. Alternatively, seeking out built-for-purpose laboratory spaces for lease that have already addressed these needs, biotech campuses for example, can expedite the overall timeline for operations to commence.

It is also common to underestimate the footprint that allows for efficiency of high-throughput operations. Space to spread out makes the workflow accommodating to sudden upticks in sample volume and is desirable for general workplace aesthetics in post-Covid times. Adequate space also serves to reduce potential hazards of crowded areas or overflowing storage items in walkways or exit routes.

Occupational health and safety should be a priority when considering facility build-out. Cannabis testing typically requires everyday use of solvents such as methanol and acetonitrile as well as nitric and hydrochloric acids during sample preparation and for liquid chromatography. Moderate volumes of solvent and acid waste are therefore generated on a routine basis. Adequate flammables cabinets for storing solvents should be in place, with separated acid-specific dedicated storage space as well. Green waste disposal is another consideration and should be conducted in a manner that limits staff exposure during destruction of stored cannabis due to potential mold presence.

Modernize operations

Testing industries other than (and prior to) cannabis have come a long way in modernizing operations toward digitized software systems for data capture and recordkeeping, with less reliance on paper-based documentation systems. Laboratory information management systems (LIMS) and quality management systems (QMS) software platforms are cornerstones of lab operations. LIMS and digital QMS software can be customized to automate lab processes, especially surrounding routine data acquisition and document control tasks. Automation of physical sample preparation steps can allow a single-shift laboratory to achieve 24/7 productivity.

Recruit quality talent, invest in your people

Cannabis testing requires experienced chemists and microbiologists to handle the scope of testing and sample volume. Appropriate in-house talent will pay off during times of increased troubleshooting, when decisions are required for out-of-specification events, and for encounters with new sample matrices, just to name a few examples. Cannabis labs require substantial capital investment to acquire sophisticated equipment and software systems, and equal consideration should be given to the investment of attracting and retaining quality individuals with relevant experience, capable of performing under the stress of high sample volume and demanding turnaround times. Employee retention is a key contributing factor to the long-term success of most businesses, and is especially important for cannabis testing labs.

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