

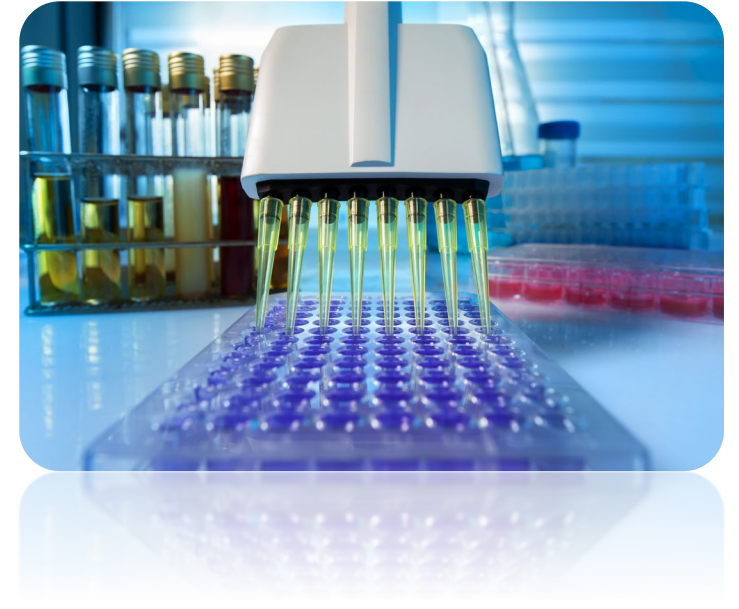


# Choosing a Lab Partner

Ryan Bellone  
KCA Laboratories  
Nicholasville, Kentucky

# What we'll cover

- Why the quality of a lab is important
- When to use a lab
- Where to start
- Assessing the quality of a lab
- Results and marketing



# History of falsifying information and missing important information

“Dry-labbing”

News

‘Unreliable testing’ prompts Michigan to suspend a marijuana company’s license for the first time

Updated Aug 19, 2019; Posted Aug 16, 2019

Sparks marijuana lab reported false THC data, fined \$70K

Jenny Kane, Reno Gazette Journal Published 11:28 a.m. PT Dec. 19, 2019

MARIJUANA | STATE GOVERNMENT

Group of marijuana testing labs calls state to release more records, discipline bad actors amid evidence of inaccurate test results

By  Michelle Rindels

December 13th, 2019 - 3:13pm

<sup>1</sup> Executive Reorganization as a Type I agency within MCL 833.27001(1)(a), (d), independent of LARA's dir

“False-negatives”

Oregon CBD company sues lab over THC-laden extract shipment

Published April 28, 2020

CDC: Vitamin E Likely Culprit in Vaping Cases

CBD retailer falsely claimed oils were heavy-metal-free, lawsuit says

Published May 5, 2020

# KCA Labs Remediation Case Study

- THC remediation company in the US claimed to remove THC completely
- KCA Labs' client sent a sample from the remediated batch to us and another well-known reputable lab
- Both laboratories indicated presence of residual THC
- THC remediation company defended itself with two of their own laboratories' results, both with higher LOD's
- KCA Labs provided a data packet of confirmatory analysis, including raw data files, triplicate runs, ion fragmentation agreements, to prove presence of THC
- Ultimately, the liability falls on the product owner

# When should you use a lab

**Nurseries** – Prior grow season results to distribute with seeds and clones, evaluating new cultivars, harvesting results for next year's sales

**Farmers** – Requesting COAs for seeds and clones, throughout the grow season (lifecycle analysis), assessing cultivar content, leading up to harvesting, alongside regulation testing

**Processors** – Along with samples from farmers, other raw material testing, research and development, finished product quality testing from a third-party lab

**Retailers** – Upon receiving new batches or blind spot checking

Develop a plan for testing with your lab.



# Where to start

Ask about the following:

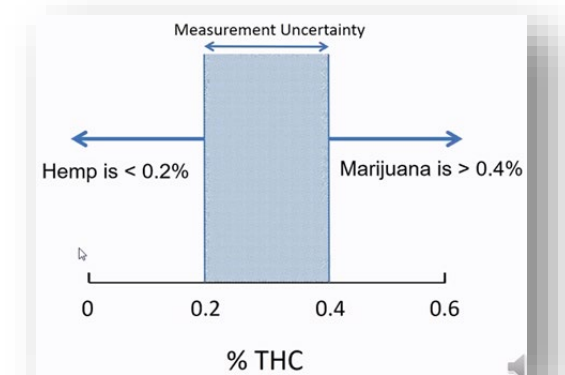
- **Technical offerings**
  - Potency, terpenes, pesticides, solvents, research, consulting, etc.
- **Turnaround time**
  - Your needs, lab capacity, and expediting
- **Cost**
  - Low isn't always better, volume discounts, bundled discounts
- **Licenses, registrations, and accreditations**
  - ISO 17025, DEA, state license



# Assessing the quality of a lab

## Specifications to consider:

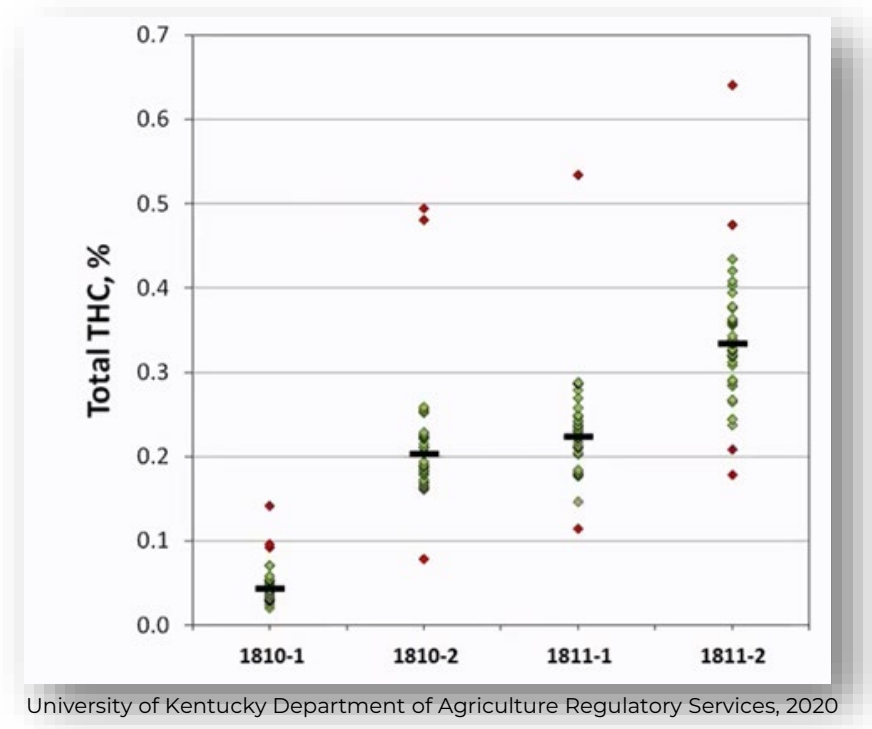
- **Limit of Detection (LOD)** - the lowest quantity of a substance that can be distinguished from the absence of that substance with a stated confidence level.
  - Important for contaminants
- **Limit of Quantitation (LOQ)** - the lowest concentration at which the analyte can not only be reliably detected but at which some predefined goals for bias and imprecision are met.
  - Important for profiling
- **Measurement Uncertainty (MU)** - the expression of the statistical dispersion of the values attributed to a measured quantity.
  - Narrower range is indicative of lab quality, but wider allows more leeway



University of Kentucky Department of Agriculture  
Regulatory Services, 2020

# Assessing the quality of a lab

- **Internal Standards** – Laboratory specified quality controls
- **Proficiency Testing** – Every lab should be performing some form of proficiency testing
  - ISO 17043, University of Kentucky, Phenova, Emerald Test
  - Internal/external blind samples
- **Independent vs. In-House** – State required independent testing for finished products and pre-harvest plant material
  - In-house has viable uses, but may not meet external requirements





# Assessing the quality of a lab

	0	1	2	3	NA	Observations
<b>Organization and Personnel</b>						
Does the Quality Assurance Unit perform Audits, trend metrics and report the results to the Laboratory Management?						
Is the Quality Assurance Unit reporting independently from the Laboratory Unit?						
<b>Certification/License</b>						
Does the laboratory maintain any certifications/licenses?						
Are there copies of certifications/licenses available?						
<b>Standard Operating Procedures/Methods</b>						
Is there a governing SOP that outlines the creation, revision, approval, distribution, document control and retirement of SOPs?						
Are SOPs in compliance with the current version governing SOPs?						
Is there a current index listing of the SOPs available?						
Is there a schedule for review of the SOPs?						
Are the SOPs in locations where they are used?						

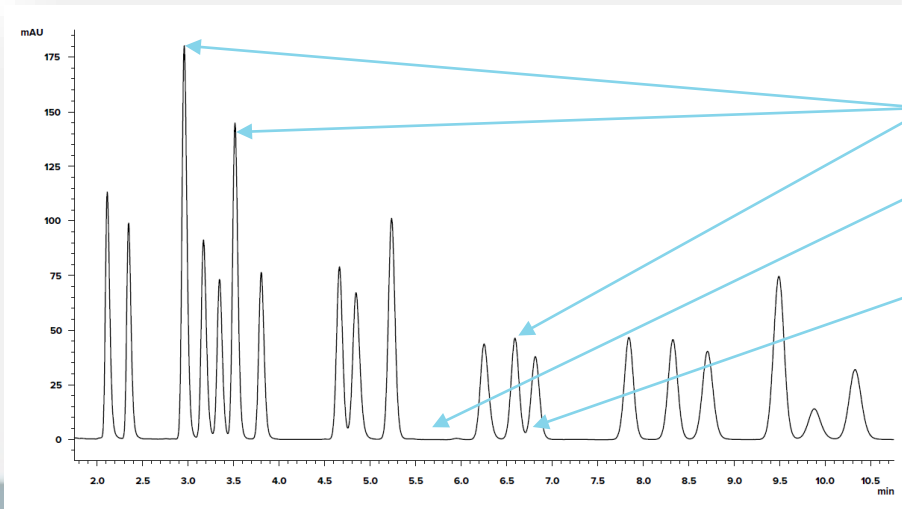
Perform your own due diligence

- Laboratory audit checklists
  - Check licenses and accreditations
  - State agencies, A2LA, ANAB, PJLA
- Equipment: new, used, service contracts
- Technical staff experience
- Gauge the relationship
  - Responsiveness and customer service
  - Consistency, predictability, trust

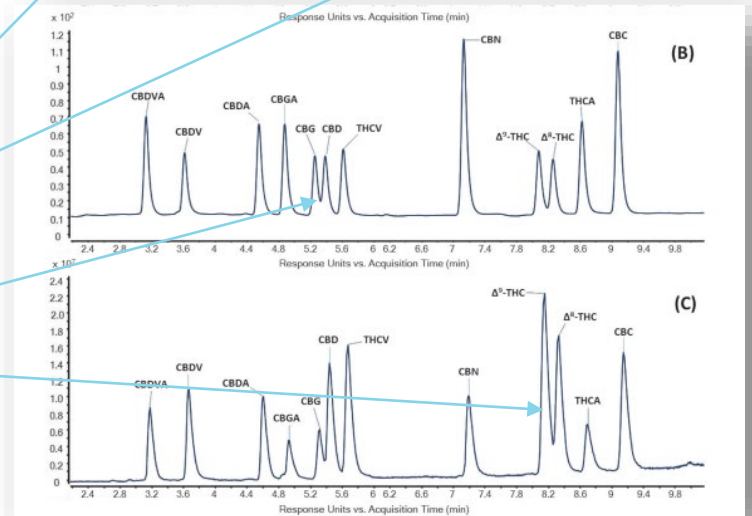
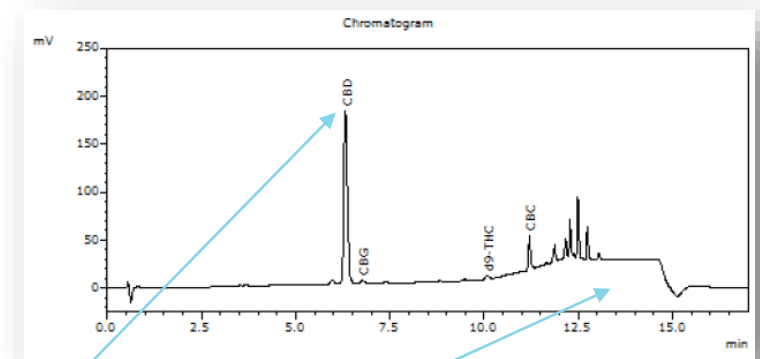
# Chromata-what?

Chromatograms are visual charts of the data output by the instruments and can be used to assess the quality of the analyses.

Here are some things to look for:



Number of Peaks  
Baseline Resolution  
Co-eluting



# Pesticides, a sore spot

## Why test for so many when farmers aren't using them?

- Safety of end-users
- Within state and out-of-state compliance, especially California
- Inadvertent contamination identification
- You may not think there is contamination, your clients should be concerned about contamination, and the end users will raise hell if there is contamination



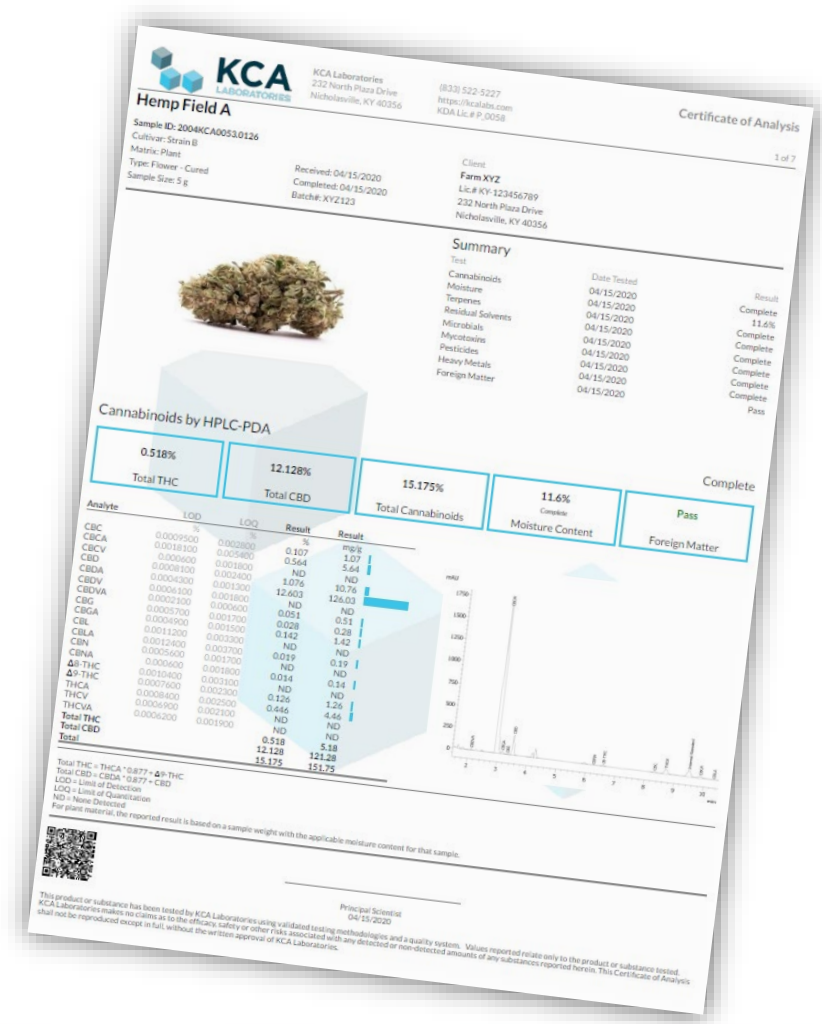
# All for a piece of paper

## Certificates of Analysis (COAs, CofAs, CoAs)

- Standard laboratory output
- Compare to other labs
- No guarantees, so choose your lab wisely

## Marketing tools

- QR codes, certificate verification, logo licensing



Thank you. Any questions?

[rbellone@kcalabs.com](mailto:rbellone@kcalabs.com)

+1-833-KCA-LABS