

# HOW TO READ A LAB CERTIFICATE OF ANALYSIS FOR YOUR CANNABIS PRODUCT

*in New York*

## Why does cannabis testing matter?

All legal cannabis products must be made in New York State, created in a controlled environment, and made using sanitary practices. Cannabis products must pass lab testing before being sold at licensed adult-use retail or medical dispensaries. Lab testing ensures available cannabis products are safer to consume and are accurately labeled for potency. To make sure your product is correctly labeled and lab tested use the link or QR code required on every product label to view that product's "**Certificate of Analysis**" (CoA).

## What does New York State require all cannabis products be tested for?

By requiring cannabis products to be tested, New York State is protecting the health and safety of cannabis consumers. Lab testing helps to ensure that cannabis products sold by licensed dispensaries meet testing standards and provides consumers details about their purchased product. This includes product information related to lab testing for: **cannabinoid profile, microorganisms, heavy metals, pesticides, residual solvents, water activity, foreign materials, and other analytes or contaminants**. For more on these **Terms to Know** visit page 2.

## What about unregulated products?

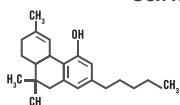
All regulated products must be labeled accurately, but many unregulated products are not labeled at all. If you purchase unregulated cannabis and it is labeled – you can't trust **ANY** of the information on the label. It may not be lab tested – even if it says it is. The potency levels may be completely wrong – **IF** they are even listed. The cultivar (strain) name could be inaccurate – **IF** it is even listed. Because there is no oversight, an unregulated product could say whatever it wants without anyone verifying the information is correct.



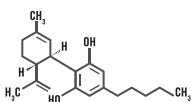
# Terms to Know



A **Cannabinoid** is a molecule that can regulate different organs and tissues in the body. The most frequently talked about cannabinoids are tetrahydrocannabinol (THC) and cannabidiol (CBD).



**THC** or “**Tetrahydrocannabinol**” is a cannabinoid known for its psychoactive effects or the feeling of being high.



**CBD** or “**Cannabidiol**” is the second most prevalent cannabinoid in cannabis. Many people who grow hemp, grow varieties that are high in CBD. Unlike THC, CBD does not cause a “high” or psychoactive effect by itself.



**Cannabinoid Profile** means the specific amounts of tetrahydrocannabinol (THC), cannabidiol (CBD), and any other cannabinoids, that are mentioned on the cannabis product’s packaging or label.



**Terpenes** are organic compounds that provide the aroma of cannabis and a variety of other plants. For example, some common terpenes smell like:

- Citrus (limonene)
- Pine (pinene)
- Lavender (linalool)
- Black pepper (caryophyllene)



**Potency** refers to the amount of THC and CBD in your cannabis product.



**Limit of Quantitation (LOQ)** is the smallest amount (or concentration) of a substance that can be determined accurately using lab testing methods.

## Potential Contaminants



**Microorganisms** are potentially harmful microscopic organisms, that can grow in cannabis products as a result of light pollution or unsanitary conditions during any point from growing to packaging a cannabis product.



**Heavy Metals** can be absorbed by cannabis plants as they grow in the soil. Potentially toxic metals such as mercury, arsenic, or lead could also be introduced during the processing or manufacturing of a cannabis product.



**Pesticides** are chemicals used during cultivation to protect cannabis plants from mold, insects, and harmful bacteria that can interfere with healthy growth of the plant.



**Residual Solvents** are used to make concentrated cannabis products.



**Water Activity** and **Moisture Content** tests are used as an indicator for harmful microorganism growth in cannabis products.



**Foreign Materials** include any type of matter that does not belong in a cannabis product.

## Who tests the cannabis products before they become available for consumers?

Lab sampling firms authorized by the Office of Cannabis Management (OCM) will collect product samples from New York State licensees and deliver the samples to labs for testing. Every form of cannabis product (flower, pre-rolls, edibles, or topicals) must be tested – there are no exceptions.

## What is a Certificate of Analysis (CoA)?

A CoA is a certified lab report that provides testing results of a cannabis product. The CoA allows consumers to easily access details related to specific testing results that are required for each cannabis product type. The CoA is a report of all quality assurance measures a cannabis product has been tested for. This helps consumers learn more about specific cannabinoids present in a product as well as the potentially harmful contaminants.

**Cannabinoid Testing** reflects the total active or amount of each cannabinoid present, in milligrams, found per dose or serving, in the tested product sample.

The CoA must also include sections that provide information on:

- **Heavy Metal Testing;**
- **Pesticide Testing;** and
- **Microbial Impurities Testing.**

Each section should reflect the specific contaminant being tested (example: “lead” for Heavy Metal Testing) and whether or not the sample PASSED or FAILED. If the presence of a harmful contaminant is detected above the limit set by the OCM, then the test is considered to have “FAILED.” If the contaminant is detected below the limit, then the test is considered to have “PASSED.”



A product sold in a regulated dispensary should never show any test as “FAILED” on a CoA.

## Where do I find the Certificate of Analysis (CoA) on my cannabis product label?

New York State requires that all cannabis products sold at licensed dispensaries have a label with a link or QR code that brings you directly to the CoA for that cannabis product. When you scan the QR code you will either go directly to the CoA or a website where you can find the CoA for that cannabis product.

# How to Read a Certificate of Analysis (CoA)

## So, you found the CoA... now what?

Knowing what to look for in the CoA will help you make informed choices when choosing which cannabis product to purchase. You may notice that CoAs from different labs may not all look exactly the same but they all contain the same kind of information.

## Here's an example of what a CoA may look like:

**ABC LABORATORIES**

**Certificate of Analysis**

**Organization name:** ABC Cannabis  
**Lot unique identifier:** T999RF  
**Sample name:** Edible  
**Received date:** 11/2/2022

**Contact information:** Manhattan  
**Batch/sample ID:** 12345  
**Sample Type:** Lozenge  
**Reported date:** 11/5/2022

**License number:** 10099100  
**Collection date:** 11/2/2022  
**Serving size:** 5mg  
**Report status:** Final

Test	Percent %	LOQ (%)
CBC	0.056	.05
CBD	<LOQ	.05
CBDV	0.060	.05
CBDA	<LOQ	.05
CBG	0.066	.05
CBN	<LOQ	.05
Delta 8- THC	<LOQ	.05
Delta 9- THC	0.650	.05
Delta 9- THCA	21.852	.05
Delta 10 -THC	<LOQ	.05
THCV	<LOQ	.05
Total CBD	0.092	
Total THC	19.814	

Test	Parts per million (ppm)	Status	Limit	LOQ
Antimony	<LOQ	PASS	<2.00	1
Arsenic	<LOQ	PASS	<1.50	0.1
Cadmium	<LOQ	PASS	<0.20	0.1
Lead	<LOQ	PASS	<110.00	1
Copper	7.44	PASS	<30.00	1

Test Marker	Parts per million (ppm)	Status	Limit
Azadirachtin	<LOQ	PASS	<1000.00
indole-3-butyric acid	<LOQ	PASS	<1000.00
Myclobutanil	<LOQ	PASS	<200.00
Piperonyl butoxide	<LOQ	PASS	<2000.00
Pyrethrins Total	<LOQ	PASS	<1000.00

Test	CFU/Dose	Status
Total Aerobic Bacterial Count	<1	PASS
E. coli species	Negative	PASS
Salmonella species	Negative	PASS

**Organization name and license number** is where you'll find the name and New York State cannabis license number of the business who made the cannabis product.

**Lot Unique Identifier or Lot Number or Bar Code** is a unique identifier that allows New York State to track the complete history of each cannabis product. This includes where the product was grown, manufactured, processed, tested, and distributed. It also allows OCM to issue recalls for specific products if needed.

**Batch/Sample ID** is a unique set of numbers and/or letters that identifies the specific product sample being tested.

**Collection Date** is the date that the sample was collected from the licensee for testing.

**Sample Name** refers to what kind of cannabis product is being tested.

**Sample Type** refers to the final product form (e.g. pre-rolls, lozenges, chews or flower) of the cannabis being tested.

**Received Date** is the date the lab received the product sample for testing.

**Reported Date** is the date the CoA was created and reported to the licensee.

**Report Status** indicates whether or not testing is in process or has been completed and finalized.

Please note this is a sample CoA only

# Cannabinoid Profile Testing

**Cannabinoid Profile** is the specific amounts of tetrahydrocannabinol (THC), cannabidiol (CBD), and any other cannabinoids, that are mentioned on the cannabis product's packaging or label.

Some profiles show **Cannabinoid Ratios**, which tell you how much of one cannabinoid is in the product relative to another cannabinoid. For example, 1:1 means the product includes the same amount of THC as CBD. Other cannabinoid ratios are 4:1, 20:1, etc.

**Read labels carefully and consult dispensary staff if you need more information to make sure you understand the products you are purchasing.**

In New York State's regulated industry, inhaled products (such as pre-rolls or flower) will indicate the percentage (%) of total THC, CBD, and other cannabinoids. Whereas edible products will indicate total amount of THC in milligrams (mg) per serving and per package.

**ABC LABORATORIES** **Certificate of Analysis**

**Organization name:** ABC Cannabis  
**Lot unique identifier:** T999RF  
**Sample name:** Edible  
**Received date:** 11/2/2022

**Contact information:** Manhattan  
**Batch/sample ID:** 12345  
**Sample Type:** Lozenge  
**Reported date:** 11/5/2022

**License number:** 10099100  
**Collection date:** 11/2/2022  
**Serving size:** 5mg  
**Report status:** Final

Test	Percent %	LOQ (%)
CBC	0.056	.05
CBD	<LOQ	.05
CBDA	0.060	.05
CBDV	<LOQ	.05
CBG	0.066	.05
CBN	<LOQ	.05
Delta 8- THC	<LOQ	.05
Delta 9- THC	21.852	.05
Delta 9- THCA	<LOQ	.05
Delta 10 -THC	<LOQ	.05
THCV	0.092	
<b>Total CBD</b>	19.814	
<b>Total THC</b>		

Test	Parts per million (ppm)	Status	Limit	LOQ (ppm)
Antimony	<LOQ	PASS	<2.00	1
Arsenic	<LOQ	PASS	<1.50	0.1
Cadmium	<LOQ	PASS	<0.20	0.1
Lead	<LOQ	PASS	<110.00	1
Copper	7.44	PASS	<30.00	1

Test Marker	Parts per million (ppm)	Status	Limit	LOQ (ppm)
Azadirachtin	<LOQ	PASS	<1000.00	125
indole-3-butyric acid	<LOQ	PASS	<1000.00	62.5
Myclobutanil	<LOQ	PASS	<200.00	62.5
Piperonyl butoxide	<LOQ	PASS	<2000.00	62.5
Pyrethrins Total	<LOQ	PASS	<1000.00	9

Test	CFU/Dose	Status
Total Aerobic Bacterial Count	<1	PASS
E. coli species	Negative	PASS
Salmonella species	Negative	PASS

Please note this is a sample CoA only

# Heavy Metals & Pesticide Testing

**Heavy Metal Testing:** Here you'll see if the lab testing detected any metals that could be potentially toxic. These metals can be absorbed by cannabis during the growing, processing, or manufacturing of a cannabis product. If no significant presence of these metals are found in the cannabis product the results will say, "PASS."

For each test marker you will see the result of the lab testing as well as the **LIMIT**. This means the amount of any given contaminant that is allowed to be present on or in a cannabis product. These limits are set by New York State and can be found online.

Scan the QR code for more information.



These limits are based on how much of a given contaminant must be present to pose a risk if consumed.

**Test marker** describes what specific test is being analyzed.

ABC LABORATORIES			Certificate of Analysis		
<b>Organization name:</b>	ABC Cannabis	<b>Contact information:</b>	Manhattan		
<b>Lot unique identifier:</b>	T999RF	<b>Batch/sample ID:</b>	12345		
<b>Sample name:</b>	Edible	<b>Sample Type:</b>	Lozenge		
<b>Received date:</b>	11/2/2022	<b>Reported date:</b>	11/5/2022		
		<b>License number:</b>	10099100		
		<b>Collection date:</b>	11/2/2022		
		<b>Serving size:</b>	5mg		
		<b>Report status:</b>	Final		
Test	Percent %	LOG (%)			
CBC	0.056	.05			
CBD	<LOQ	.05			
CBDa	0.060	.05			
CBDV	<LOQ	.05			
CBG	0.066	.05			
CBN	<LOQ	.05			
Delta 8- THC	<LOQ	.05			
Delta 9- THC	0.650	.05			
Delta 9- THCA	21.852	.05			
Delta 10 -THC	<LOQ	.05			
THCV	<LOQ	.05			
Total CBD	0.092				
Total THC	19.814				
Test	Parts per million (ppm)	Status	Limit	LOQ (ppm)	
Antimony	<LOQ	PASS	<2.00	1	
Arsenic	<LOQ	PASS	<1.50	0.1	
Cadmium	<LOQ	PASS	<0.20	0.1	
Lead	<LOQ	PASS	<110.00	1	
Copper	7.44	PASS	<30.00	1	
Test Marker	Parts per million (ppm)	Status	Limit	LOQ (ppm)	
Azadirachtin	<LOQ	PASS	<1000.00	125	
indole-3-butyric acid	<LOQ	PASS	<1000.00	62.5	
Myclobutanil	<LOQ	PASS	<200.00	62.5	
Piperonyl butoxide	<LOQ	PASS	<2000.00	62.5	
Pyrethrins Total	<LOQ	PASS	<1000.00	9.3	
Test	CFU/Dose	Status			
Total Aerobic Bacterial Count	<1	PASS			
E. coli species	Negative	PASS			
Salmonella species	Negative	PASS			

Please note this is a sample CoA only

# Microbial Testing

Test Marker	Parts per million (ppm)	Status	Limit	LOQ (ppm)
Arsenic	<LOQ	PASS	<30.00	
Cadmium	<LOQ	PASS		
Lead	7.44			
Copper				
Azadirachtin	<LOQ	PASS	<1000.00	125
indole-3-butyric acid	<LOQ	PASS	<1000.00	62.5
Myclobutanil	<LOQ	PASS	<200.00	62.5
Piperonyl butoxide	<LOQ	PASS	<2000.00	62.5
Pyrethrins Total	<LOQ	PASS	<1000.00	9.38
Test	CFU/Dose	Status	Limit	
Total Aerobic Bacterial Count	<1	PASS		<10,000
E. coli species	Negative	PASS		
Salmonella species	Negative	PASS		

Please note this is a sample CoA only

**CFU** is the number of “colony forming units” of viable bacterial or fungal cells estimated in a sample.

If the test status is “**PASS**” that means that no harmful amounts of a contaminant have been detected and the product is considered fit for human consumption. **Regulated dispensaries can only sell products that have passed these tests. You should never see a FAILED result on any CoA for a cannabis product you purchase in New York State.**

## Accidental Cannabis Exposure or Overconsumption of Cannabis

Call the Poison Center at **1-800-222-1222** if you think someone has been exposed to a cannabis product and is awake and alert. Call **911** if the person is showing signs of an emergency. Contact the Poison Center or your veterinarian immediately if your pet has ingested cannabis.

## Contact the Office of Cannabis Management

If you have questions regarding the Office of Cannabis Management, please call us at **1-888-OCM-5151** (1-888-626-5151) or email us: [info@ocm.ny.gov](mailto:info@ocm.ny.gov)



Scan here to report concerns about a cannabis product or business.