

# **Hemp Quality Assurance Testing**

## **CERTIFICATE OF ANALYSIS**

**DATE ISSUED 08/14/2023** 

SAMPLE NAME: Integrate/d

Infused, Liquid Edible

**CULTIVATOR / MANUFACTURER** 

Business Name: License Number:

Address:

SAMPLE DETAIL

**Batch Number:** 10108098 **Sample ID:** 230811M020

**DISTRIBUTOR / TESTED FOR** 

Business Name: Acknowledge Farms,

LLC

License Number:

Address:

Date Collected: 08/11/2023 Date Received: 08/11/2023

Batch Size:

Sample Size: 1.0 units

Unit Mass:

Serving Size: 1 milliliters per Serving







Scan QR code to verify authenticity of results.

#### **CANNABINOID ANALYSIS - SUMMARY**

Total THC: 0.654 mg/mL

Total CBD: 19.271 mg/mL

Sum of Cannabinoids: 21.261 mg/mL

Total Cannabinoids: 21.261 mg/mL

Total THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during the decarboxylation step: Total THC =  $\Delta^{9}$ -THC + (THCa (0.877))

Total CBD = CBD + (CBDa (0.877))

$$\label{eq:SumofCannabinoids} \begin{split} &Sum\ of\ Cannabinoids = \Delta^9\text{-THC} + \text{THCa} + \text{CBD} + \text{CBDa} + \text{CBG} + \text{CBGa} + \\ &T\text{HCV} + \text{THCVa} + \text{CBC} + \text{CBCa} + \text{CBDV} + \text{CBDVa} + \Delta^8\text{-THC} + \text{CBL} + \text{CBN} \\ &T\text{otal}\ Cannabinoids} = (\Delta^9\text{-THC} + 0.877*\text{THCa}) + (\text{CBD} + 0.877*\text{CBDa}) + \\ &(\text{CBG} + 0.877*\text{CBGa}) + (\text{THCV} + 0.877*\text{THCVa}) + (\text{CBC} + 0.877*\text{CBCa}) + \\ \end{split}$$

(CBDV+0.877\*CBDVa) +  $\Delta$ <sup>8</sup>-THC + CBL + CBN

Density: 0.9164 g/mL

### **TERPENOID ANALYSIS - SUMMARY**

39 TESTED, TOP 3 HIGHLIGHTED

Total Terpenoids: 0.0629%

B-Caryophyllene 0.270 mg/g

α-Bisabolol 0.136 mg/g

<mark>α-Humule</mark>ne 0.101 mg/g

**SAFETY ANALYSIS - SUMMARY** 

 $\Delta^9$ -THC per Serving:  $\bigcirc$  PASS

For quality assurance purposes. Not a Regulatory Hemp Lab Test Report. These results relate only to the sample included on this report. This report shall not be reproduced, except in full, without written approval of the laboratory.

Sample Certification: California Code of Regulations Title 4 Division 19. Department of Cannabis Control Business and Professions Code. Reference: Sections 26100, 26104 and 26110, Business and Professions Code.

**Decision Rule:** Statements of conformity (e.g. Pass/Fail) to specifications are made in this report without taking measurement uncertainty into account. Where statements of conformity are made in this report, the following decision rules are applied: PASS - Results within limits/specifications, FAIL - Results exceed limits/specifications.

OC verified by: Kevin Flores Job Title: Senior Laboratory Analyst Date: 08/14/2023 Approved by: Josh Wurzer
Job Title: Chief Compliance Officer
Date: 08/14/2023

References: limit of detection (LOD), limit of quantification (LOQ), not detected (ND), not tested (NT)



# **Hemp Quality Assurance Testing**

## **CERTIFICATE OF ANALYSIS**



INTEGRATE/D | DATE ISSUED 08/14/2023



Tested by high-performance liquid chromatography with diode-array detection (HPLC-DAD).

Method: QSP 1157 - Analysis of Cannabinoids by HPLC-DAD

TOTAL THC: 0.654 mg/mL Total THC (Δ<sup>9</sup>-THC+0.877\*THCa)

TOTAL CBD: 19.271 mg/mL Total CBD (CBD+0.877\*CBDa)

TOTAL CANNABINOIDS: 21.261 mg/mL

Total Cannabinoids (Total THC) + (Total CBD) + (Total CBG) + (Total THCV) + (Total CBC) + (Total CBDV) +  $\Delta^8$ -THC + CBL + CBN

TOTAL CBG: 0.347 mg/mL

Total CBG (CBG+0.877\*CBGa)

TOTAL THCV: ND

Total THCV (THCV+0.877\*THCVa)

TOTAL CBC: 0.861 mg/mL Total CBC (CBC+0.877\*CBCa)

TOTAL CBDV: 0.088 mg/mL Total CBDV (CBDV+0.877\*CBDVa)

#### **CANNABINOID TEST RESULTS - 08/14/2023**

COMPOUND	LOD/LOQ (mg/mL)	MEASUREMENT UNCERTAINTY (mg/mL)	RESULT (mg/mL)	RESULT (%)
CBD	0.004 / 0.011	±0.7188	19.271	2.1029
СВС	0.003 / 0.010	±0.0277	0.861	0.0940
Δ <sup>9</sup> -THC	0.002/0.014	±0.0359	0.654	0.0714
CBG	0.002 / 0.006	±0.0168	0.347	0.0379
CBDV	0.002 / 0.012	±0.0036	0.088	0.0096
CBN	0.001 / 0.007	±0.0007	0.023	0.0025
CBL	0.003 / 0.010	±0.0006	0.017	0.0019
$\Delta^8$ -THC	0.01/0.02	N/A	ND	ND
THCa	0.001 / 0.005	N/A	ND	ND
THCV	0.002 / 0.012	N/A	ND	ND
THCVa	0.002/0.019	N/A	ND	ND
CBDa	0.001 / 0.026	N/A	ND	ND
CBDVa	0.001/0.018	N/A	ND	ND
CBGa	0.002 / 0.007	N/A	ND	ND
CBCa	0.001 / 0.015	N/A	ND	ND
SUM OF CANNABINOIDS		21.261 mg/mL	2.3201%	

## Serving Size: 1 milliliters per Serving

Δ <sup>9</sup> -THC per Serving	0.654 mg/serving	PASS
Total THC per Serving	0.654 mg/serving	
CBD per Serving	19.271 mg/serving	
Total CBD per Serving	19.271 mg/serving	
Sum of Cannabinoids per Serving	21.261 mg/serving	
Total Cannabinoids per Serving	21.261 mg/serving	

#### **DENSITY TEST RESULT**

0.9164 g/mL

Tested 08/14/2023

Method: QSP 7870 - Sample



# Hemp Quality Assurance Testing CERTIFICATE OF ANALYSIS







# **Terpenoid Analysis**

Terpene analysis utilizing gas chromatographyflame ionization detection (GC-FID).

Method: QSP 1192 - Analysis of Terpenoids by GC-FID



## **β-Caryophyllene**

A sesquiterpene with a fragrance that can be described as spicy, woody, dry, dusty and mildly sweet. It was one of the first organic compounds to fully synthesized in a laboratory and plays a role in the endocannabinoid system as it is a functional CB<sub>2</sub> receptor agonist. Found in black pepper, clove, hops, rosemary, black-jack, perilla, spicebush, Indian pennywort, celery, frankincense, vitex, parsley, marigold, tamarind...etc.



#### $\alpha$ -Bisabolol

A sesquiterpene alcohol with a fragrance that can be described as floral, peppery, sweet and clean. Found in chamomile, figwort, yarrow, skullcaps, lavender, ironwort, germander...etc.



#### $\alpha$ -Humulene

Also known as  $\alpha$ -caryophyllene, it is an isomer of the sesquiterpene  $\beta$ -Caryophyllene which frequently occurs in nature with many aromatic plants across the globe. It has a fragrance that can be described as earthy or musky with spicy undertones. Found in hops, forskohlii, skullcaps, basil, nutmeg, cloves, sage, cotton, tamarind, black pepper, guava, Scotch pine...etc.

#### TERPENOID TEST RESULTS - 08/14/2023

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
β-Caryophyllene	0.004 / 0.012	±0.0075	0.270	0.0270
$\alpha$ -Bisabolol	0.008 / 0.026	±0.0056	0.136	0.0136
$\alpha$ -Humulene	0.009 / 0.029	±0.0025	0.101	0.0101
Guaiol	0.009 / 0.030	±0.0029	0.078	0.0078
Myrcene	0.008 / 0.025	±0.0004	0.044	0.0044
α-Pinene	0.005 / 0.017	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
β-Pinene	0.004 / 0.014	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Limonene	0.005 / 0.016	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Linalool	0.009/0.032	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Terpineol	0.009 / 0.031	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
trans-β-Farnesene	0.008 / 0.025	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Caryophyllene Oxide	0.010 / 0.033	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Camphene	0.005 / 0.015	N/A	ND	ND
Sabinene	0.004 / 0.014	N/A	ND	ND
α-Phellandrene	0.006 / 0.020	N/A	ND	ND
$\Delta^3$ -Carene	0.005 / 0.018	N/A	ND	ND
α-Terpinene	0.005 / 0.017	N/A	ND	ND
p-Cymene	0.005 / 0.016	N/A	ND	ND
Eucalyptol	0.006 / 0.018	N/A	ND	ND
β-Ocimene	0.006 / 0.020	N/A	ND	ND
γ-Terpinene	0.006 / 0.018	N/A	ND	ND
Sabinene Hydrate	0.006 / 0.022	N/A	ND	ND
Fenchone	0.009 / 0.028	N/A	ND	ND
Terpinolene	0.008 / 0.026	N/A	ND	ND
Fenchol	0.010/0.034	N/A	ND	ND
Isopulegol	0.005/0.016	N/A	ND	ND
Camphor	0.006/0.019	N/A	ND	ND
Isoborneol	0.004 / 0.012	N/A	ND	ND
Borneol	0.005 / 0.016	N/A	ND	ND
Menthol	0.008 / 0.025	N/A	ND	ND
Nerol	0.003 / 0.011	N/A	ND	ND
Citronellol	0.003 / 0.010	N/A	ND	ND
Pulegone	0.003 / 0.011	N/A	ND	ND
Geraniol	0.002 / 0.007	N/A	ND	ND
Geranyl Acetate	0.004/0.014	N/A	ND	ND
α-Cedrene	0.005/0.016	N/A	ND	ND
Valencene	0.009 / 0.030	N/A	ND	ND
Nerolidol	0.006 / 0.019	N/A	ND	ND
Cedrol	0.008 / 0.027	N/A	ND	ND
TOTAL TERPENOIDS			0.629 mg/g	0.0629%