Bia Diagnostics Laboratories

Office: 802-540-0148 | Fax: 802-540-0147
480 HERCULES DR. COLCHESTER, VT 05446

Certificate of Analysis

Company: Grass Roots Vermont
84 Lovers LN
Brandon, VT 05733
Customer ID: 230207-0
Grower License #: INTG0003

Sample ID: MAC
Lot: INTG0003-MAC-FBF
Matrix: Flower
Date Sampled: N/A
Date Received: 1/25/2024

Report Date: 1/31/2024
Date Analyzed: 1/30/2024
Analyst: 057
Report ID: C240125AE

Cannabinoid Summary

Cannabinoid Profile	LOQ (mg/g)	Concentration (mg/g)	Weight (%)
CBDVA	0.0005	<LOQ	<LOQ
CBDV	0.0012	<LOQ	<LOQ
CBDA	0.0008	1.30	0.13
CBGA	0.0008	9.90	0.99
CBG	0.0019	<LOQ	<LOQ
CBD	0.0019	<LOQ	<LOQ
THCV	0.0021	<LOQ	<LOQ
CBN	0.0013	<LOQ	<LOQ
Δ9-THC	0.0020	4.15	0.41
Δ8-THC	0.0019	<LOQ	<LOQ
THC-A	0.0034	278.46	27.85
CBC	0.0024	<LOQ	<LOQ
Total THC		248.36	24.84
Total CBD		1.14	0.11
Total Cannabinoids		293.81	29.38

24.84% **Total THC**	0.11% **Total CBD**
29.38% **Total Cannabinoids**	0.41% **Δ9-THC**
9.92% **Percent Moisture**	1 : 0 **THC : CBD Ratio**

Cannabinoids Methodology: High Performance Liquid Chromatography (HPLC) using PerkinElmer FLEXAR™ with Photo Diode Array Detector (PDA)

Total CBD and total THC are calculated values, to account for assumed decarboxylation from the acid form (THCA or CBDA) to the neutral form, causing weight loss of the acid group. These values are calculated as follows:
Total THC = (THCA x 0.877) + Δ9-THC
Total CBD = (CBDA x 0.877) + CBD
Ratio of Total CBD: Total THC
Reagent Blanks: < LOQs for all analytes

LOQ = The lowest quantity that this method can reliably detect. Any cannabinoid that was not detected is assumed to be less than the stated LOQ (<LOQ).

All results reflect dry weight of material, based on % moisture of the sample.

Measurement of Uncertainty (MU): the parameter, associated with the result of a measurement, that characterizes the dispersion of the values that could reasonably be attributed to the particular quantity subject to measurement.
Δ9-THC MU = ±0.005%
Total THC MU = ±0.007%

All other cannabinoid MU values are available upon request.

All moisture analysis is determined by loss-on-drying measurement using OHAUS Model MB90 Moisture Content Readers.

Certified by: Luke E. M
Luke Emerson Mason (Laboratory Director, Bia Diagnostics)

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Date Analyzed: 1/26/2024
Analyst: 052
Report ID: C240125AE

Water Activity Summary

Test	Method	Result
Water Activity	ASTM D8196: Determination of Water Activity in Cannabis Flower	0.3652

Test Methodology: Aqualab TDL 2 water activity meter with tunable diode laser

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Report Date: 2/1/2024
Date Analyzed: 2/1/2024
Analyst: 018
Report ID: C240125AE

Pathogen Summary

Target Pathogens	Method	LOD (cfu/g)	Result (cfu/g)
Aspergillus - flavus, fumigatus, niger, terreus	Aspergillus AOAC PTM No. 032104	5	<LOD
STEC	STEC Virx AOAC PTM No. 121203	5	<LOD
Salmonella spp.	Salmonella II AOAC PTM No. 010803	5	<LOD

Test Methodology: Bio-Rad IQ-Check PCR Kits

cfu/g = colony forming units per gram

LOD = The lowest quantity that this method can reliably detect. Any microbial growth that was not detected is assumed to be less than the stated LOD (<LOD).

Reagent Blanks: <LOD for all analytes

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Report Date: 1/30/2024
Date Analyzed: 1/29/2024
Analyst: 045
Report ID: C240125AE

Pesticides/Mycotoxins Summary

Category II Residual Pesticide	LOQ (ppm)	Concentration (ppm)
Abamectin	0.0100	<LOQ
Acephate	0.0010	<LOQ
Acequinocyl	0.0010	<LOQ
Azoxystrobin	0.0010	<LOQ
Bifenazate	0.0010	<LOQ
Bifenthrin	0.0010	<LOQ
Carbaryl	0.0010	<LOQ
Cypermethrin	0.0100	<LOQ
Etoxazole	0.0010	<LOQ
Imidacloprid	0.0010	<LOQ
Myclobutanil	0.0010	<LOQ
Pyrethrin I	0.0010	<LOQ
Pyrethrin II	0.0010	<LOQ
Spinosyn A	0.0010	<LOQ
Spinosyn D	0.0010	<LOQ

Category II Mycotoxin	LOQ (ppm)	Concentration (ppm)
Ochratoxin A	0.0020	NOT TESTED
Aflatoxin B1	0.0002	NOT TESTED
Alfatoxin B2	0.0010	NOT TESTED
Alfatoxin G1	0.0002	NOT TESTED
Alfatoxin G2	0.0010	NOT TESTED

Category I Residual Pesticide	LOQ (ppm)	Concentration (ppm)
Chlorpyrifos	0.0010	<LOQ
Imazalil	0.0010	<LOQ

N/A
Percent Moisture

LOQ = The lowest quantity this method can reliably detect. Any pesticide or mycotoxins that was not detected is assumed to be less than the stated LOQ (<LOQ).

All results reflect dry weight of material, based on % moisture of the sample.

ppb = parts per billion

Pesticides/Mycotoxin Methodology: Liquid Chromatography with Tandem Mass Spectrometry using PerkinElme QSight® LX50 UHPLC and QSight 220 Mass Spectrometer

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Terpenes Summary

Terpene	LOQ (mg/g)	Results (mg/g)	Weight (%)
α- Pinene	0.010	4.338	0.434
Camphene	0.010	0.458	0.046
β-Myrcene	0.010	3.024	0.302
b-Pinene	0.010	3.259	0.326
3-Carene	0.010	0.018	0.002
α-Terpinene	0.010	0.037	0.004
Limonene	0.010	7.303	0.730
ρ-Cymene	0.010	<LOQ	<LOQ
Ocimene	0.010	5.039	0.504
Eucalyptol	0.010	0.034	0.003
ϒ-Terpinene	0.010	0.049	0.005
Terpinolene	0.010	0.257	0.026
Linalool	0.010	4.051	0.405
Isopulegol	0.010	<LOQ	<LOQ
Geraniol	0.010	<LOQ	<LOQ
Caryophyllene	0.010	3.472	0.347
α-Humulene	0.010	1.501	0.150
Trans-Nerolidol	0.010	<LOQ	<LOQ
Cis-Nerolidol	0.010	<LOQ	<LOQ
Guaiol	0.010	<LOQ	<LOQ
Caryophyllene Oxide	0.010	0.013	0.001
α-Bisabolol	0.010	0.072	0.007
Total Terpenes		32.925	3.292

9.92%
Percent Moisture

LOQ = The lowest quantity this method can reliably detect. Any terpene that was not detected is assumed to be less than the stated LOQ (<LOQ).

Terpene Methodology: Headspace Sampler, Gas Chromatography-Mass Spectrometry (GC-MS), using Perkin Elmer Clarus® SQ8 GC MS

Reagent Blanks: < LOQs for all analytes

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