

Perennia Food and Agriculture Certificate of Analysis

173 Dr Bernie MacDonald Drive, Bible Hill, Nova Scotia B6L 2H5 | License: LIC-SSO85RTR5Z-2018-1
Cannabis Analytical Services



Sample **R00022-BB (S2)**

Sample ID	RC-0033-280422 (6893)	Matrix	Extract (Cannabis Oil)
Tested for	Retro Cannabis and Hemp Extracts (nick@retroextracts.com)		
Sampled -	Sampled by Client	Received	Apr 28, 2022
Analyses executed	CAN, TER, RES, MIB, ATO, PES, HME, FMI, DEN		Reported
			May 13, 2022

CAN - Cannabinoid Profile Analysis

Analyzed May 02, 2022 | Instrument HPLC | Method UNODC (modified)

Analyte	LOD %	Result %	Result mg/g
Cannabidiolic Acid (CBDA)	0.01	ND	ND
Cannabigerolic Acid (CBGA)		ND	ND
Cannabigerol (CBG)	0.02	1.40	14.00
Cannabidiol (CBD)	0.01	ND	ND
Tetrahydrocannabivarin (THCV)	0.01	0.04	0.40
Cannabinol (CBN)	0.01	0.84	8.40
Δ-9-tetrahydrocannabinol (Δ9-THC)	0.02	62.66	626.60
Δ8-tetrahydrocannabinol (Δ8-THC)	0.02	ND	ND
Cannabichromene (CBC)	0.01	0.92	9.20
Tetrahydrocannabinolic Acid (THCA)	0.01	ND	ND
Total THC (THCa * 0.877 + THC)		62.66	626.60
Total CBD (CBDa * 0.877 + CBD)		ND	ND

HME - Heavy Metals Detection Analysis

Analyzed May 13, 2022 | Instrument ICPMS | Method USP 232/233

Analyte	LOD ug/g	Result ug/g	Analyte	LOD ug/g	Result ug/g
Cadmium (Cd)	0.06	ND	Arsenic (As)	0.014	ND
Mercury (Hg)	0.02	ND	Lead (Pb)	0.03	ND

LOD Limit of Detection
LOQ Limit of Quantification
NT Not Reported
ND Not Detected
BDL Below Detection Limit
<LOQ Detected
>ULOL Above upper limit of linearity
CFU/g Colony Forming Units per 1 gram
TNTC Too Numerous to Count



Scan the QR code to verify authenticity.

Authorized Signature

S. Nichole Taylor

Nichole Taylor, MSc, Lab Director
Fri, 13 May 2022 09:04:18 AM ADT

Adele Joyce

Adele Joyce, QA Coordinator

Perennia Food and Agriculture | 173 Dr Bernie MacDonald Drive, Bible Hill, Nova Scotia B6L 2H5 | 902.890.4052 | Cannabis Analytical Services



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MIB - Microbial Testing Analysis

Analyzed May 03, 2022 | Instrument Traditional Plating Method | Method Salmonella: EP 2.6.31 E. Coli: EP 2.6.31 Bile-tolerant gram negative bacteria: EP 2.6.31 TAMC: EP 2.6.12 TYMC: EP 2.6.12 P. Aeruginosa: EP 2.6.31 S. Aureus: EP 2.6.31

Analyte	LOD	Result	Unit	Limit
Bile-tolerant gram negative bacteria	10	ND	CFU/g	
Total Aerobic Microbial Count	10	ND	CFU/g	
Total Combined Yeast and Molds Count	10	ND	CFU/g	
Salmonella spp.		ND		Absent in 25g
E. Coli		ND		Absent in 1g
Staphylococcus aureus		NT		Absent in 1g
Pseudomonas aeruginosa		NT		Absent in 1g

ATO - Aflatoxins Testing Analysis



Analyzed May 03, 2022 | Instrument LC/MS/MS | Method EP 2.8.18 Modified

Analyte	LOD ug / kg	Result ug / kg	Limit ug / kg	Analyte	LOD ug / kg	Result ug / kg	Limit ug / kg
Aflatoxin B1	0.65	ND	2 ug / kg	Aflatoxin B2	0.5	ND	2 ug / kg
Aflatoxin G1	0.94	ND	2 ug / kg	Aflatoxin G2	0.57	ND	2 ug / kg
Total Aflatoxins	2.66	ND	4 ug / kg				

LOD Limit of Detection
 LOQ Limit of Quantification
 NT Not Reported
 ND Not Detected
 BDL Below Detection Limit
 <LOQ Detected
 >ULOL Above upper limit of linearity
 CFU/g Colony Forming Units per 1 gram
 TNTC Too Numerous to Count



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PES - Pesticides Screening Analysis

Analyzed May 04, 2022 | Instrument LC/MS/MS and GC/MS/MS | Method AOAC 101.2018 Modified - Last Val. (Dry flower) Nov. 28, 2019, (Oil) Sept. 4, 2020

Analyte	LOD ug/g	Result ug/g	Limit ug/g	Analyte	LOD ug/g	Result ug/g	Limit ug/g
Abamectin	0.25	BDL	0.25	Acephate	0.05	BDL	0.05
Acetamiprid	0.05	BDL	0.05	Acequinocyl	1.5	BDL	0.05
Aldicarb	0.5	BDL	1.0	Allethrin	0.1	BDL	0.2
Azadirachtin	0.5	BDL	1.0	Azoxystrobin	0.01	BDL	0.02
Benzovindiflupyr	0.01	BDL	0.02	Bifenazate	0.01	BDL	0.05
Bifenthrin	5.0	BDL	1.0	Boscalid	0.01	BDL	0.02
Buprofezin	0.01	BDL	0.02	Carbaryl	0.025	BDL	0.05
Carbofuran	0.01	BDL	0.02	Chlorantraniliprole	0.01	BDL	0.02
Chlorphenapyr	0.5	BDL	1.5	Chlorpyrifos	0.2	BDL	0.5
Clofentezine	0.01	BDL	0.02	Clothianidin	0.025	BDL	0.05
Coumaphos	0.01	BDL	0.02	Cyantranilipole	0.01	BDL	0.02
Cyfluthrin	1.0	BDL	1.0	Cypermethrin	1.0	BDL	1.0
Cyprodinil	0.01	BDL	0.25	Daminozide	0.5	BDL	0.1
Deltamethrin	0.25	BDL	1.0	Diazinon	1.0	BDL	0.02
Dichlorvos	0.05	BDL	0.1	Dimethoate	0.01	BDL	0.02
Dimethomorph	0.025	BDL	0.05	Dinotefuran	0.05	BDL	0.1
Dodemorph	0.25	BDL	0.05	Endosulfan-alpha	2.0	BDL	2.5
Endosulfan-beta	0.25	BDL	2.5	Endosulfan-sulfate	2.5	BDL	2.5
Ethoprophos	0.01	BDL	0.02	Etofenprox	0.25	BDL	0.05
Etoxazole	0.1	BDL	0.02	Etridiazol	0.15	BDL	0.15
Fenoxycarb	0.01	BDL	0.02	Fenpyroximate	0.1	BDL	0.02
Fensulfothion	0.01	BDL	0.02	Fenthion	0.01	BDL	0.02
Fenvalerate	0.5	BDL	0.1	Fipronil	0.01	BDL	0.06
Fonicamid	0.025	BDL	0.05	Fludioxonil	0.01	BDL	0.02
Fluopyram	0.01	BDL	0.02	Hexythiazox	0.5	BDL	0.01
Imazalil	0.01	BDL	0.05	Imidacloprid	0.01	BDL	0.02
Iprodione	0.2	BDL	1.0	Kinoprene	1.25	BDL	1.25
Kresoxim-methyl	0.1	BDL	0.02	Malathion	0.01	BDL	0.02
Metalaxyl	0.01	BDL	0.02	Methiocarb	0.01	BDL	0.02
Methomyl	0.025	BDL	0.05	Methoprene	20.0	BDL	2.0
Methyl-parathion	0.5	BDL	0.05	Mevinphos	0.025	BDL	0.05
MGK-264	0.25	BDL	0.05	Myclobutanil	0.01	BDL	0.02
Naled	0.5	BDL	0.2	Novaluron	0.025	BDL	0.05
Oxamyl	1.5	BDL	3.0	Pacllobutrazol	0.01	BDL	0.02
Permethrin	2.5	BDL	0.5	Phenothrin	2.5	BDL	0.05
Phosmet	0.2	BDL	0.02	Piperonyl-butoxide	0.5	BDL	1.25
Pirimicarb	0.01	BDL	0.02	Prallethrin	0.5	BDL	0.05
Propiconazole	0.5	BDL	0.1	Propoxur	0.01	BDL	0.02
Pyraclostrobin	0.01	BDL	0.02	Pyrethrins	0.25	BDL	0.05
Pyridaben	0.02	BDL	0.05	Quintozene	0.75	BDL	0.02
Resmethrin	0.05	BDL	0.1	Spinetoram	0.01	BDL	0.02
Spinosad	0.01	BDL	0.1	Spirodiclofen	0.2	BDL	0.25
Spiromesifen	1.5	BDL	3.0	Spirotetramat	0.01	BDL	0.1
Spiroxamine	0.5	BDL	0.1	Tebuconazole	0.01	BDL	0.05
Tebufenozide	0.01	BDL	0.02	Teflubenzuron	0.025	BDL	0.05
Tetrachlorvinphos	0.01	BDL	0.02	Tetramethrin	0.5	BDL	0.1
Thiachloprid	0.1	BDL	0.02	Thiamethoxam	0.01	BDL	0.02
Thiophanate-methyl	0.25	BDL	0.05	Trifloxystrobin	0.01	BDL	0.02

DEN - Density Analysis

Analyzed May 05, 2022 | Instrument NA

Analyte	Result
Density	1.01 g/mL

LOD Limit of Detection
 LOQ Limit of Quantification
 NT Not Reported
 ND Not Detected
 BDL Below Detection Limit
 <LOQ Detected
 >ULOL Above upper limit of linearity
 CFU/g Colony Forming Units per 1 gram
 TNTC Too Numerous to Count



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RES - Residual Solvents Testing Analysis

Analyzed May 05, 2022 | Instrument HS/GC/MS | Method USP<467> Modified

Analyte	LOD ug/g	Result ug/g	Limit	Analyte	LOD ug/g	Result ug/g	Limit
Acetic Acid	2500.0	ND		Acetone	1000.0	ND	
Anisole	1000.0	ND		1-Butanol	1000.0	ND	
2-Butanol	1000.0	ND		Butyl Acetate	1000.0	ND	
Butane	1000.0	ND		Tert-Butylmethyl Ether	100.0	ND	
Dimethyl Sulfoxide	1000.0	ND		Ethanol	1000.0	ND	
Ethyl Acetate	1000.0	ND		Ethyl Ether	1000.0	ND	
Ethyl Formate	1000.0	ND		Formic Acid	1000.0	ND	
Heptane	1000.0	ND		Isobutyl Acetate	100.0	ND	
Isopropyl Acetate	100.0	ND		Methyl Acetate	100.0	ND	
3-Methyl-1-Butanol	1000.0	ND		Methylethyl ketone	1000.0	ND	
2-Methyl-1-Propanol	100.0	ND		Pentane	1000.0	ND	
1-Pentanol	1000.0	ND		1-Propanol	1000.0	ND	
2-Propanol	1000.0	ND		Propane	1000.0	ND	
Propyl Acetate	500.0	ND		Triethylamine	1000.0	ND	

TER - Terpenes Testing Analysis

Analyzed May 03, 2022 | Instrument GC/FID | Method GC/FID

Analyte	LOD mg/g	(%)	(mg/g)	Analyte	LOD mg/g	(%)	(mg/g)
α-Pinene (α-Pin)	0.04	0.12	1.19	Camphene (Cam)	0.04	0.03	0.29
Sabinene (Sab)	0.07	ND	ND	b-Pinene (b-Pin)	0.06	0.22	2.15
Myrcene (Myr)	0.08	0.26	2.58	α-Phellandrene (α-Phe)	0.04	ND	ND
3-Carene (3-Car)	0.01	ND	ND	α-Terpinene (α-Ter)	0.02	ND	ND
p-Cymene (p-Cym)	0.03	ND	ND	Limonene (Lim)	0.15	1.00	10.03
Eucalyptol (Euc)	0.03	ND	ND	Ocimene (Oci)	0.05	ND	ND
g-Terpinene (g-Ter)	0.04	ND	ND	Sabinene Hydrate (SabHyd)	0.03	0.04	0.40
Terpinolene (Terp)	0.01	0.09	0.87	Linalool (Lin)	0.05	0.09	0.92
Fenchol (Fen)	0.05	0.07	0.74	Camphor (Cam)	0.03	ND	ND
Isoborneol (Isobo)	0.01	ND	ND	Borneol (Bor)	0.02	0.07	0.73
Menthol (Ment)	0.05	ND	ND	α-Terpineol (α-Terp)	0.03	0.11	1.10
Nerol (Nerl)	0.01	ND	ND	Pulegone (Pule)	0.01	ND	ND
Geraniol (Gera)	0.02	ND	ND	Geranyl acetate (Gera)	0.02	ND	ND
α-Cedrene (α-Ced)	0.03	ND	ND	b-Caryophyllene (b-Cary)	0.09	2.28	22.78
α-Humulene (α-Hum)	0.09	0.76	7.61	Valencene (Vale)	0.03	ND	ND
Nerolidol (cis and trans) (Ner)	0.03	0.39	3.87	Caryophyllene Oxide (CarOx)	0.04	0.08	0.81
Guaiol (Gua)	0.03	0.15	1.51	Cedrol (Ced)	0.04	0.03	0.27
α-bisabolol (α-Bbis)	0.07	0.54	5.38				
Total Terpene Concentration						6.32 %	63.21 mg/g

FMI - Foreign Material Inspection Analysis

Analyzed May 02, 2022 | Instrument Microscope | Method

Analyte / Limit	Result	Analyte / Limit	Result
Foreign Material	Negative		

LOD Limit of Detection
 LOQ Limit of Quantification
 NT Not Reported
 ND Not Detected
 BDL Below Detection Limit
 <LOQ Detected
 >ULOL Above upper limit of linearity
 CFU/g Colony Forming Units per 1 gram
 TNTC Too Numerous to Count



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