

SUMMARY OF ANALYSIS (SAMPLE ID: SA34034)

Testing Location: Arkansas 232 S. Broadview St. Greenbrier, AR 72058 License: ADH 113	Customer ID: 2161 River Valley Relief Cultivation 5601 Old Greenwood Rd Suite C Fort Smith, AR 72903 License: 00065C	Order ID: OR10246 Lot Number: M00065C13131069226 Production Run: 3017H20221103RTZ-3	Sample Type: Primary Matrix: Flower Mass: 17g Date Collected: 01/04/2023 Date Received: 01/04/2023 Date Completed: 01/11/2023
Cultivar (Strain) or Sample Description: Runtz			

*This page is simply a summary of the analysis performed. For analytical details, please consult the individual Certificate(s) of Analysis for each of the specific test(s) performed. All contaminant action levels are referenced from the State of Arkansas MMJ testing guidelines.

Moisture Content (%)

13.7

Water Activity (aw)

0.463 @ 24.7°C

PASS/FAIL

PASS

Moisture content/water activity action levels are referenced from the State of Arkansas MMJ testing guidelines.

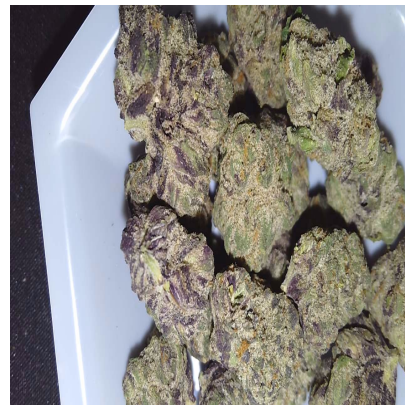
Moisture content levels less than 15% are recommended but the sample does not fail. Water activity levels must be less than 0.65aw.

Cannabinoids (Top 3)	(%)	mg/g
THCA	21.6	216
Δ9-THC	1.31	13.1
THCVA	0.160	1.60
TOTAL CBD	-	-
TOTAL THC	20.3	203
TOTAL CANNABINOIDS	23.1	231

Terpenes (Top 5)	(%)	µg/g
Linalool	0.276	2760
β-Caryophyllene	0.176	1760
β-Myrcene	0.149	1490
d-Limonene	0.137	1370
trans-Nerolidol	0.0490	490
TOTAL TERPENES	0.821	8210

Contaminants	PASS/FAIL
Heavy Metals:	PASS
Microbiology:	PASS
Pesticides:	PASS

Sample Picture Upon Receipt



Scan the QR code to verify results.

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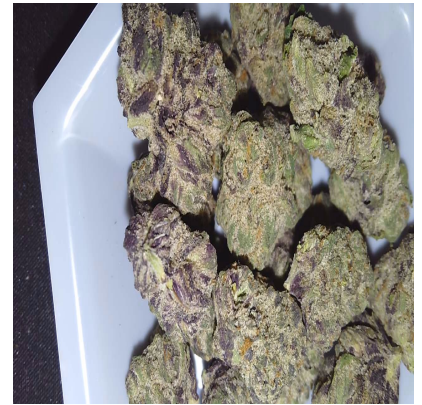
CANNABINOID (POTENCY) PROFILE (SOP: SOP-CANN-001)

Analysis Date/Time: 01/06/2023 1710
Analyst: PW

Method: HPLC/DAD
Instrument: Agilent 1100

Moisture Content (%): 13.7
Water Activity (aw): 0.463 @ 24.67°C

<u>Cannabinoid</u>	<u>Result (%)</u>	<u>UM (+/-%)</u>	<u>Result (mg/g)</u>	<u>LOQ (mg/g)</u>	<u>Result (mg/mL)</u>	<u>Per Serving (mg)</u>	<u>Per Unit (mg)</u>
CBC	-	-	-	1.01	-	-	-
CBCA	-	-	-	3.12	-	-	-
CBD	-	-	-	7.09	-	-	-
CBDA	-	-	-	2.61	-	-	-
CBDV	-	-	-	1.14	-	-	-
CBDVA	-	-	-	3.03	-	-	-
CBG	-	-	-	4.61	-	-	-
CBGA	-	-	-	3.30	-	-	-
CBL	-	-	-	5.32	-	-	-
CBN	-	-	-	2.44	-	-	-
CBNA	-	-	-	2.63	-	-	-
Δ9-THC	1.31	0.118	13.1	2.92	-	13.1	13.1
Δ8-THC	-	-	-	4.57	-	-	-
THCA	21.6	1.95	216	1.59	-	216	216
THCV	-	-	-	3.81	-	-	-
THCVA	0.160	0.0144	1.60	1.21	-	1.60	1.60
TOTAL	23.1	2.08	231			231	231
TOTAL CBC	-	-	-			-	-
TOTAL CBD	-	-	-			-	-
TOTAL CBDV	-	-	-			-	-
TOTAL CBG	-	-	-			-	-
TOTAL CBN	-	-	-			-	-
TOTAL THC	20.3	1.83	203			203	203
TOTAL THCV	0.139	0.0125	1.39			1.39	1.39



SERVING MASS (g): 1.00
SERVINGS/UNIT: 1

"-" Not detected above LOD.

Deviations from standard operating procedure:
None

Recoveries for all analyte standards: 90-110%
Replicate Uncertainties: <5% RSD, <20% RPD
Sample/Reagent Blanks: <RL for all analytes

Values for plant matter are adjusted for moisture content.

Total CBC = (CBCA x 0.877) + CBC
Total CBD = (CBDA x 0.877) + CBD
Total CBDV = (CBDVA x 0.867) + CBDV
Total CBG = (CBGA x 0.878) + CBG
Total CBN = (CBNA x 0.876) + CBN
Total THC = (THCA x 0.877) + Δ9-THC
Total THCV = (THCVA x 0.867) + THCv

Percentage results are reported by mass.

mg/g results are reported as mass component per mass material.

* CBCA, CBDVA, CBL, CBNA, and THCVA are in process of being added to our accreditation scope.

Abbreviations: DAD - Diode Array Detector, HPLC - High Pressure Liquid Chromatography, RL - Reporting Limit, RPD - Relative Percent Difference, RSD - Relative Standard Deviation, DET - Detected (less than LOQ), LOD - Limit of Detection, LOQ - Limit of Quantitation, UM - Measurement Uncertainty

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Cultivar (Strain) or Sample Description: Runtz **Date Completed:** 01/11/2023

TERPENOID PROFILE

Analysis Date/Time: 01/10/2023 1249
Analyst: KF

Method: GC/MS
Instrument: Agilent 7890/5975

Deviations from SOP:
None

<u>Terpene</u>	<u>Result (µg/g)</u>	<u>Result (%)</u>	
α-Bisabolol	-	-	
Camphene	-	-	
δ-3-Carene	-	-	
β-Caryophyllene	1760	0.176	■
Caryophyllene oxide	-	-	
p-Cymene	-	-	
Eucalyptol	-	-	
Geraniol	-	-	
Guaiol	-	-	
α-Humulene	138	0.0138	■
Isopulegol	-	-	
d-Limonene	1370	0.137	■
Linalool	2760	0.276	■
β-Myrcene	1490	0.149	■
cis-Nerolidol	-	-	
trans-Nerolidol	490	0.0490	■
α-Ocimene	-	-	
β-Ocimene	-	-	
α-Pinene	-	-	
β-Pinene	202	0.0202	■
α-Terpinene	-	-	
γ-Terpinene	-	-	
Terpinolene	-	-	
TOTAL	8210	0.821	



Abbreviations: GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit

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"-" Not detected above RL.

Reporting Limit (µg/g): 42.1

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Kyle W. Felling
Kyle W. Felling, Ph.D.
Laboratory Director



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PESTICIDES PROFILE (SOP: SOP-PEST-001)

Analysis Date/Time: 01/10/2023 2109
Analyst: KF

Method: LC/MS/MS
Instrument: Shimadzu LC-8050

Deviations from SOP:
None

Pesticide	Result (µg/g)	LOD (µg/g)	LOQ (µg/g)	Action Level (µg/g)	Pesticide	Result (µg/g)	LOD (µg/g)	LOQ (µg/g)	Action Level (µg/g)
Abamectin (71751-41-2)	-	0.0421	0.337	0.5	Kresoxim-methyl (143390-89-0)	-	0.0421	0.337	0.4
Acephate (30560-19-1)	-	0.0421	0.337	0.4	Malathion (121-75-5)	-	0.0421	0.337	0.2
Acetaminocyl (57960-19-7)	-	0.0421	0.337	2	Metalaxyl (57837-19-1)	-	0.0421	0.337	0.2
Acetamiprid (135410-20-7)	-	0.0421	0.337	0.2	Methiocarb (2032-65-7)	-	0.0421	0.337	0.2
Aldicarb (116-06-3)	-	0.0421	0.337	0.4	Methomyl (16752-77-5)	-	0.0421	0.337	0.4
Azoxystrobin (131860-33-8)	-	0.0421	0.337	0.2	Methyl parathion (298-0-0)	-	0.0421	0.337	0.2
Bifenazate (149877-41-8)	-	0.0421	0.337	0.2	MGK 264 (113-48-4)	-	0.0421	0.337	0.2
Bifenthrin (82657-04-3)	-	0.0421	0.337	0.2	Myclobutanil (88671-89-0)	-	0.0421	0.337	0.2
Boscalid (188425-85-6)	-	0.0421	0.337	0.4	Naled (300-76-5)	-	0.0421	0.337	0.5
Carbaryl (63-25-2)	-	0.0421	0.337	0.2	Oxamyl (23135-22-0)	-	0.0421	0.337	1
Carbofuran (1563-66-2)	-	0.0421	0.337	0.2	Pacllobutrazol (76738-62-0)	-	0.0421	0.337	0.4
Chlorantraniliprole (800008-45-7)	-	0.0421	0.337	0.2	Permethrins (52645-53-1)	-	0.0421	0.337	0.2
Chlorfenapyr (122453-73-0)	-	0.0421	0.337	1	Phosmet (732-11-6)	-	0.0421	0.337	0.2
Chlorpyrifos (2921-88-2)	-	0.0421	0.337	0.2	Piperonyl butoxide (51-03-6)	-	0.0421	0.337	2
Clofentezine (74115-24-5)	-	0.0421	0.337	0.2	Prallethrins (2331-36-9)	-	0.0421	0.337	0.2
Cyfluthrin (68359-37-5)	-	0.0421	0.337	1	Propiconazole (60207-90-1)	-	0.0421	0.337	0.4
Cypermethrin (52315-07-8)	-	0.0421	0.337	1	Propoxur (114-26-1)	-	0.0421	0.337	0.2
Daminozide (1596-84-5)	-	0.0421	0.337	1	Pyrethrins (8003-34-7)	-	0.0421	0.337	1
DDVP (62-73-7)	-	0.0421	0.337	0.1	Pyridaben (96489-71-3)	-	0.0421	0.337	0.2
Diazinon (333-41-5)	-	0.0421	0.337	0.2	Spinosad (168316-95-8)	-	0.0421	0.337	0.2
Dimethoate (60-51-5)	-	0.0421	0.337	0.2	Spiromesifen (283594-90-1)	-	0.0421	0.337	0.2
Ethoprophos (13194-48-4)	-	0.0421	0.337	0.2	Spirotetramat (203313-25-1)	-	0.0421	0.337	0.2
Etofenprox (80844-07-1)	-	0.0421	0.337	0.4	Spiroxamine (118134-30-8)	-	0.0421	0.337	0.4
Etoxazole (153233-91-1)	-	0.0421	0.337	0.2	Tebuconazole (80443-41-0)	-	0.0421	0.337	0.4
Fenoxycarb (72490-01-8)	-	0.0421	0.337	0.2	Thiacloprid (111988-49-9)	-	0.0421	0.337	0.2
(E)-Fenpyroximate (134098-61-6)	-	0.0421	0.337	0.4	Thiamethoxam (153719-23-4)	-	0.0421	0.337	0.2
Fipronil (120068-37-3)	-	0.0421	0.337	0.4	Trifloxystrobin (141517-21-7)	-	0.0421	0.337	0.2
Fonicamid (158062-67-0)	-	0.0421	0.337	1					
Fludioxinil (131341-86-1)	-	0.0421	0.337	0.4					
Hexythiazox (78587-05-0)	-	0.0421	0.337	1					
Imazalil (35554-44-0)	-	0.0421	0.337	0.2					
Imidacloprid (138261-41-3)	-	0.0421	0.337	0.4					



Color Key

RESULT < AL
RESULT > AL

"DET" detected less than LOQ
"-." not detected above LOD
Permethrins measured as the cumulative residue of the *cis*- and *trans*- permethrin isomers.
Pyrethrins measured as the cumulative residue of the pyrethrin I, cinerin I, and jasmolin I isomers.
Action levels are referenced from the State of Arkansas MMJ testing guidelines.
A value of "-" for the action level means that analyte is not currently regulated by the regulations referenced above.
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Abbreviations: LC - Liquid Chromatography, MS - Mass Spectrometry, RL - Reporting Limit, AL - Action Level, CAS - Chemical Abstract Services, LOD - Limit of Detection, LOQ - Limit of Quantification

Pesticide	Synonym(s)	Pesticide	Synonym(s)	Pesticide	Synonym(s)
Cyfluthrin	Baythroid	Myclobutanil	Systhane	Propiconazole	Tilt
DDVP	Dichlorvos	Naled	Dibrom	Propoxur	Baygon
Ethoprophos	Prophos	Phosmet	Imidan		

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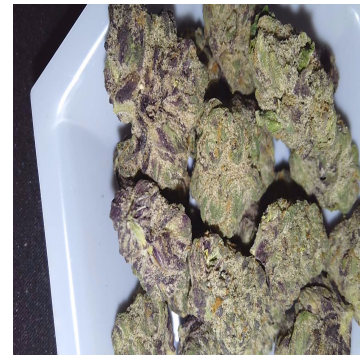
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Cultivar (Strain) or Sample Description: Runtz			Date Completed: 01/11/2023

HEAVY METAL PROFILE (SOP: SOP-ICP-200.7)

Analysis Date/Time: 01/07/2023 1003 (ICP/OES) **Method:** ICP/OES **Deviations from SOP:**
Analysis Date/Time: - (DMA) **Instrument:** Agilent 720-ES None
Analyst: KF

<u>Heavy Metal</u>	<u>Result</u> (µg/kg)	<u>LOD</u> (µg/kg)	<u>LOQ</u> (µg/kg)	<u>Action Level</u> (µg/kg)
Arsenic (As)	-	59.8	94.8	200
Cadmium (Cd)	-	59.8	94.8	200
Lead (Pb)	-	59.8	94.8	500
Mercury (Hg)	-	59.8	94.8	100



Abbreviations: ICP - Inductively-Coupled Plasma, OES - Optical Emission Spectroscopy,
 DMA - Direct Mercury Analyzer, RL - Reporting Limit, AL - Action Level, LOD - Limit of Detection, LOQ - Limit of Quantitation

Color Key



"DET" detected less than LOQ
 "-" not detected above LOD

Action levels for heavy metals are referenced from the State of Arkansas MMJ testing guidelines.

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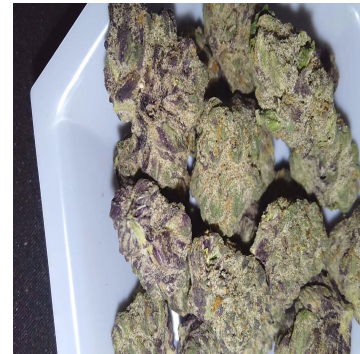
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Cultivar (Strain) or Sample Description: Runtz			

MICROBIOLOGICAL PROFILE (SOP: SOP-Micro-001)

Analysis Date/Time: 1/7/2022 1230 **Method:** Hardy Diagnostics CompactDry **Deviations from SOP:**
Analyst: PW **Instrument:** Thermo Incubator None

<u>Bacteria/Microbe</u>	<u>Result (CFU/g)</u>	<u>Action Level (CFU/g)</u>
Aerobic Plate Count	NT	-
Coliforms, Total	Absent	1
Escherichia Coli (E. Coli)	Absent	100
Mold/Yeast	NT	-
Pseudomonas aeruginosa	NT	1
Salmonella spp.	NT	-
Staphylococcus aureus	NT	-



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit, RL - Reporting Limit, AL - Action Level, TNTC - Too Numerous To Count, NT - Not Tested
Absent - Not Detected Above RL, Present - Detected Above RL

Color Key



Reporting Limit (CFU/g)
1

Action levels for microbiology are referenced from the State of Arkansas MMJ testing guidelines.
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