

CERTIFICATE OF ANALYSIS

Project: Medical Cannabis
Order ID: 2019000668

Customer ID: 47091123
Customer Name: Rocking M

Harvest/Extract Lot: MB19-03-19C1
Harvest/Extract Date:

Cultivar (Strain): Cheese
Sample Date: 03/11/2019

Lab ID: 2019002280
Date Received: 03/11/2019

Sample Matrix: Flower
Date Completed: 03/15/2019

Remarks:

Analysis Date/Time: 03-12-2019 0135
Analyst: KWF

Method: HPLC/UV
Instrument: Agilent 1100

Moisture Content (%): 8.41
Water Activity (aw): 0.2378 at 24.98°C

<u>Cannabinoid</u>	<u>Result (%)</u>	<u>Result (mg/g)</u>	<u>Reporting Limit (mg/g)</u>	<u>Per Unit (mg)</u>
CBD	0.221	2.21	0.050	2.21
CBDa	<RL	<RL	0.050	-
CBDv	0.0955	0.955	0.050	0.950
Δ9-THC	0.307	3.07	0.050	3.07
Δ8-THC	<RL	<RL	0.050	-
THCa	20.4	204	0.050	204
CBC	<RL	<RL	0.050	-
CBG	1.28	12.8	0.050	12.8
CBGa	<RL	<RL	0.050	-
CBN	<RL	<RL	0.050	-
TOTAL	22.4	224		224
TOTAL THC	18.2	182		182
TOTAL CBD	0.221	2.21		2.21

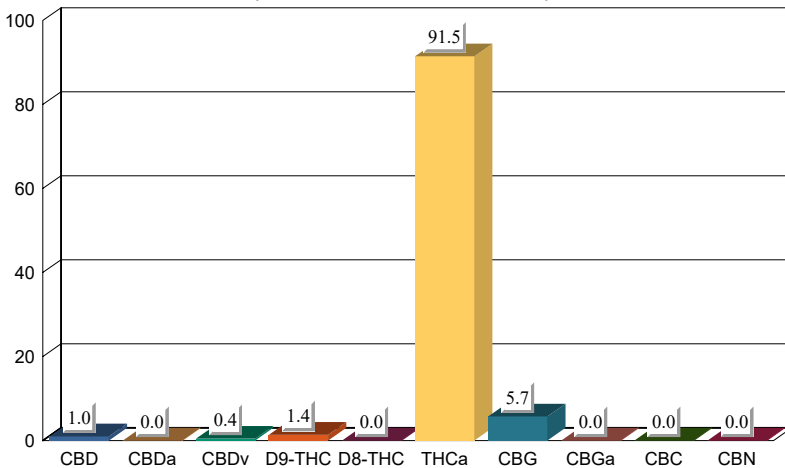


UNIT MASS (g): 1.00

Deviations from standard operating procedure: None

Cannabinoid Distribution

(% of Total Cannabinoids)



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 THC = (THCa x 0.877) + Δ9-THC
Total CBD = (CBDa x 0.877) + CBD

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

Abbreviations: UV - Ultraviolet, HPLC - High Pressure Liquid Chromatography, RL - Reporting Limit, RPD - Relative Percent Difference, RSD - Relative Standard Deviation

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REPORT OF LABORATORY ANALYSIS

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

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Remarks:

TERPENOID PROFILE

Analysis Date/Time: 03-11-2019 2152 **Method:** HS/GC/MS (Internal Method-002)
Analyst: KWF

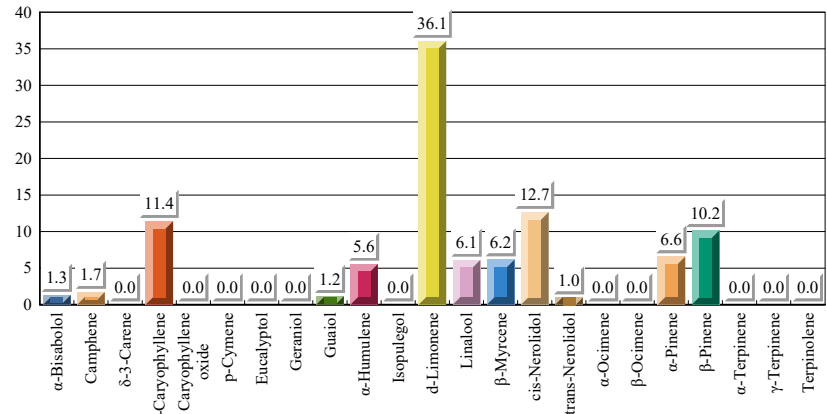
Deviations from SOP:
None

<u>Terpene</u>	<u>Result</u> (<u>µg/g</u>)	<u>Result</u> (<u>%</u> , <u>total terpenes</u>)
α-Bisabolol	105	1.31
Camphene	138	1.73
δ-3-Carene	-	-
β-Caryophyllene	909	11.4
Caryophyllene oxide	-	-
p-Cymene	-	-
Eucalyptol	-	-
Geraniol	-	-
Guaiol	92.8	1.17
α-Humulene	444	5.58
Isopulegol	-	-
d-Limonene	2869	36.1
Linalool	487	6.13
β-Myrcene	491	6.17
cis-Nerolidol	1008	12.7
trans-Nerolidol	76.6	0.964
α-Ocimene	-	-
β-Ocimene	-	-
α-Pinene	524	6.59
β-Pinene	810	10.2
α-Terpinene	-	-
γ-Terpinene	-	-
Terpinolene	-	-
TOTAL	7953	100



Terpenoid Distribution

(% of Total Terpenes)



Reporting Limit (µg/g) 13

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

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Date Completed: 03/15/2019

Remarks:

HEAVY METAL PROFILE

Analysis Date/Time: 03-14-2019 0836 **Method:** ICP-OES (EPA 200.7)
Analyst: KWF **Instrument:** Agilent 720-ES

Deviations from SOP:
None

<u>Heavy Metal</u>	<u>Result</u> ($\mu\text{g}/\text{kg}$)	<u>Action Level</u> ($\mu\text{g}/\text{kg}$)
Arsenic (As)	-	200
Cadmium (Cd)	-	200
Lead (Pb)	-	100
Mercury (Hg)	-	500



Abbreviations: ICP - Inductively-Coupled Plasma, OES - Optical Emission Spectroscopy,
RL - Reporting Limit, AL - Action Level

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit ($\mu\text{g}/\text{kg}$)

50

"-" not detected above reporting limit

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Date Completed: 03/15/2019

Remarks:

MICROBIOLOGICAL PROFILE

Analysis Date/Time: 03-15-2019 0800 **Method:** Hardy Diagnostics CompactDry
Analyst: KWF **Instrument:** Plate/Incubation (35°C)

Deviations from SOP:
None

<u>Bacteria/Microbe</u>	<u>Result (CFU/mL)</u>	<u>Action Level (CFU/mL)</u>
Coliforms, Total	Absent	100
Escherichia Coli (E. Coli)	Absent	1
Yeast	Absent	10000
Mold	Absent	10000
Salmonella spp.	Absent	1



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit, RL - Reporting Limit, AL - Action Level

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (CFU/mL)

1

"Absent" not detected above reporting limit

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Sample Matrix: Flower
Date Completed: 03/15/2019

Remarks:

PESTICIDE PROFILE

Analysis Date/Time: 03-13-2019 1121 **Method:** LC/MS/MS and GC/MS
Analyst: KWF

Deviations from SOP:
Instrument: Waters TQD and Agilent 7890/5975 None

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



Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit ($\mu\text{g/g}$)
1/2 of AL

"-" not detected above reporting limit

"*" analyzed by GC/MS
(all others analyzed by LC/MS/MS)

Permethrins measured as the cumulative residue of the *cis*- and *trans*- permethrin isomers

Pyrethrin measured as the cumulative residue of pyrethrin I, cinerin I, and jasmolin I.

<u>Pesticide</u>	<u>Synonym(s)</u>	<u>Pesticide</u>	<u>Synonym(s)</u>	<u>Pesticide</u>	<u>Synonym(s)</u>
Cyfluthrin	Baythroid	Myclobutanil	Sythane	Propiconazole	Tilt
DDVP	Dichlorvos	Naled	Dibrom	Propoxur	Baygon
Ethoprophos	Prophos	Phosmet	Imidan		

Abbreviations: LC - Liquid Chromatography, GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit, AL - Action Level, CAS - Chemical Abstract Services

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