

CERTIFICATE OF ANALYSIS

SAMPLE NAME: KHALIFA KUSH (FLOWER)

SAMPLE CODE: CAN-231023-003

CLIENT: GRASSHOPPER FARMS | AU-G-C-000362

BATCH RESULT: PASS



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Traverse City, MI 49686
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License #: AU-SC-000112



TEST PACKAGE:

1A405030001AF43000012345

MATRIX NAME:

Flower

SAMPLE TYPE:

Compliance

RECEIVED DATE:

Monday, Oct 23, 2023

PUBLISHED DATE:

Thursday, Oct 26, 2023

SOURCE PACKAGE:

1A405030001AF43000012324

BATCH CODE:

N/A

BATCH SIZE:

22700g

SAMPLE SIZE:

114.44g



LAB-TM-001

Potency Analysis by
HPLC-DAD



LAB-TM-005

Heavy Metals Analysis
by ICP-MS



LAB-TM-012

Terpene Analysis by
GC-MS



LAB-TM-006

Aspergillus Analysis by
qPCR



LAB-TM-026

Enumeration of Total
Coliforms



LAB-TM-003

Chemical Residue
Analysis by GC-
MS/MS



LAB-TM-002

Chemical Residue
Analysis by LC-MS/MS



LAB-TM-009

Water Activity Analysis



LAB-TM-007

Foreign Matter and Filth
Analysis



LAB-TM-015

Enumeration of Total
Yeast and Mold



LAB-TM-006

Salmonella and Shiga
Toxin Producing E. coli
Analysis by qPCR

RESULTS REVIEWED BY: Leslie Varela

Laboratory Director
Cambium Analytica
Thursday, Oct 26, 2023

RESULTS REVIEWED BY: Douglas Smith

VP - Scientific Operations
Cambium Analytica
Thursday, Oct 26, 2023

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LAB-TM-001 - DETERMINATION OF POTENCY BY HPLC-DAD
 POT-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Cannabinoids	31.27 %	N/A			N/A
THCA	28.85 %	N/A	0.4497 ug/g	4.9472 ug/g	N/A
Total THC	27.01 %	N/A			N/A
Delta-9 THC	1.704 %	N/A	0.4945 ug/g	1.516 ug/g	N/A
CBGA	0.4963 %	N/A	0.4596 ug/g	4.8149 ug/g	N/A
CBG	0.1494 %	N/A	0.2073 ug/g	0.8539 ug/g	N/A
CBDA	0.0726 %	N/A	0.0886 ug/g	0.2949 ug/g	N/A
Total CBD	0.0637 %	N/A			N/A
CBC	ND	N/A	0.4372 ug/g	4.843 ug/g	N/A
CBD	ND	N/A	0.6432 ug/g	5.401 ug/g	N/A
CBDV	ND	N/A	0.0919 ug/g	0.4418 ug/g	N/A
CBN	ND	N/A	0.3561 ug/g	4.3163 ug/g	N/A
Delta-8 THC	ND	N/A	0.4043 ug/g	4.5669 ug/g	N/A
Delta-8 THCV	ND	N/A	0.050425 ug/g	0.339339 ug/g	N/A
Delta-9 THCV	ND	N/A	0.269941 ug/g	0.403267 ug/g	N/A
Total THCV	ND	N/A			N/A

LAB-TM-005 - DETERMINATION OF HEAVY METALS BY ICP-MS
 MET-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Arsenic	0.065 ug/g	0.4 ug/g	0.1985 ug/kg	0.6616 ug/kg	PASS
Cadmium	0.038 ug/g	0.4 ug/g	0.0817 ug/kg	0.2724 ug/kg	PASS
Chromium	0.067 ug/g	1.2 ug/g	0.6272 ug/kg	2.0907 ug/kg	PASS
Copper	11.3 ug/g	N/A	0.1546 ug/kg	0.5152 ug/kg	N/A
Lead	0.046 ug/g	1 ug/g	0.0845 ug/kg	0.2817 ug/kg	PASS
Mercury	0.006 ug/g	0.2 ug/g	0.0171 ug/kg	0.0571 ug/kg	PASS
Nickel	0.539 ug/g	1 ug/g	0.3213 ug/kg	1.0709 ug/kg	PASS



LAB-TM-012 - DETERMINATION OF TERPENES BY GC-MS

TRP-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Terpenes	2.46 %	N/A	0.5 ug/g	1 ug/g	N/A
Trans Caryophyllene	1.09 %	N/A	0.5 ug/g	1 ug/g	N/A
Limonene	0.347 %	N/A	0.5 ug/g	1 ug/g	N/A
Alpha Bisabolol	0.317 %	N/A	0.5 ug/g	1 ug/g	N/A
Alpha Humulene	0.295 %	N/A	0.5 ug/g	1 ug/g	N/A
Alpha Terpineol	0.087 %	N/A	0.5 ug/g	1 ug/g	N/A
Linalool	0.082 %	N/A	0.5 ug/g	1 ug/g	N/A
Beta Myrcene	0.081 %	N/A	0.5 ug/g	1 ug/g	N/A
1,R-Endo-Fenchyl Alcohol	0.047 %	N/A	0.5 ug/g	1 ug/g	N/A
Beta Pinene	0.044 %	N/A	0.5 ug/g	1 ug/g	N/A
Borneol	0.042 %	N/A	0.5 ug/g	1 ug/g	N/A
Alpha Pinene	0.028 %	N/A	0.5 ug/g	1 ug/g	N/A
Alpha Cedrene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Alpha Phellandrene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Alpha Terpinene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Camphene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Camphor	ND	N/A	0.5 ug/g	1 ug/g	N/A
Caryophyllene Oxide	ND	N/A	0.5 ug/g	1 ug/g	N/A
Cedrol	ND	N/A	0.5 ug/g	1 ug/g	N/A
Cis Beta Ocimene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Cis Nerolidol	ND	N/A	0.5 ug/g	1 ug/g	N/A
Delta-3 Carene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Eucalyptol	ND	N/A	0.5 ug/g	1 ug/g	N/A
Fenchone	ND	N/A	0.5 ug/g	1 ug/g	N/A
Gamma Terpinene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Geranyl Acetate	ND	N/A	0.5 ug/g	1 ug/g	N/A
Guaial	ND	N/A	0.5 ug/g	1 ug/g	N/A
Isoborneol	ND	N/A	0.5 ug/g	1 ug/g	N/A
Isopulegol	ND	N/A	0.5 ug/g	1 ug/g	N/A
Pulegone	ND	N/A	0.5 ug/g	1 ug/g	N/A
Sabinene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Sabinene Hydrate	ND	N/A	0.5 ug/g	1 ug/g	N/A
Terpinolene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Trans Beta Ocimene	ND	N/A	0.5 ug/g	1 ug/g	N/A
Trans Nerolidol	ND	N/A	0.5 ug/g	1 ug/g	N/A
Valencene	ND	N/A	0.5 ug/g	1 ug/g	N/A



LAB-TM-006 - MICROBIAL ANALYSIS BY QPCR

ASP-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Aspergillus Flavus	ND	Detection			PASS
Aspergillus Fumigatus	ND	Detection			PASS
Aspergillus Niger	ND	Detection			PASS
Aspergillus Spp	ND	Detection			PASS
Aspergillus Terreus	ND	Detection			PASS

LAB-TM-026 - ENUMERATION OF TOTAL COLIFORMS ON 3M CC PLATES

COL-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Coliforms	420 CFU/g	1000 CFU/g			PASS

LAB-TM-003 - DETERMINATION OF CHEMICAL RESIDUE BY GC-MS/MS

PGC-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Chlorfenapyr	ND	1 ug/g	6.110 ug/kg	20.400 ug/kg	PASS
Methyl Parathion	ND	0.2 ug/g	3.120 ug/kg	10.500 ug/kg	PASS



LAB-TM-002 - DETERMINATION OF CHEMICAL RESIDUE BY LC-MS/MS

PLC-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Abamectin	ND	0.5 ug/g	0.0736 ug/kg	0.7999 ug/kg	PASS
Acephate	ND	0.4 ug/g	0.0262 ug/kg	0.22 ug/kg	PASS
Acequinocyl	ND	2 ug/g	0.0236 ug/kg	0.2484 ug/kg	PASS
Acetamiprid	ND	0.2 ug/g	0.0199 ug/kg	0.1836 ug/kg	PASS
Aldicarb	ND	0.4 ug/g	0.0316 ug/kg	0.2633 ug/kg	PASS
Azoxystrobin	ND	0.2 ug/g	0.0141 ug/kg	0.1166 ug/kg	PASS
Bifenazate	ND	0.2 ug/g	0.0136 ug/kg	0.1513 ug/kg	PASS
Bifenthrin	ND	0.2 ug/g	0.0272 ug/kg	0.2691 ug/kg	PASS
Boscalid	ND	0.4 ug/g	0.0157 ug/kg	0.1589 ug/kg	PASS
Carbaryl	ND	0.2 ug/g	0.0287 ug/kg	0.2836 ug/kg	PASS
Carbofuran	ND	0.2 ug/g	0.0282 ug/kg	0.2676 ug/kg	PASS
Chlorantraniliprole	ND	0.2 ug/g	0.017 ug/kg	0.1643 ug/kg	PASS
Chlorpyrifos	ND	0.2 ug/g	0.0289 ug/kg	0.3114 ug/kg	PASS
Clofentezine	ND	0.2 ug/g	0.0396 ug/kg	0.3123 ug/kg	PASS
Cyfluthrin	ND	1 ug/g	0.0622 ug/kg	0.8882 ug/kg	PASS
Cypermethrin	ND	1 ug/g	0.0399 ug/kg	0.283 ug/kg	PASS
Daminozide	ND	1 ug/g	0.0299 ug/kg	0.2517 ug/kg	PASS
Diazinon	ND	0.2 ug/g	0.0325 ug/kg	0.1872 ug/kg	PASS
Dichlorvos	ND	1 ug/g	0.0299 ug/kg	0.2656 ug/kg	PASS
Dimethoate	ND	0.2 ug/g	0.0272 ug/kg	0.2606 ug/kg	PASS
Ethoprophos	ND	0.2 ug/g	0.0365 ug/kg	0.3453 ug/kg	PASS
Etofenprox	ND	0.4 ug/g	0.0212 ug/kg	0.1912 ug/kg	PASS
Etoxazole	ND	0.2 ug/g	0.0197 ug/kg	0.1929 ug/kg	PASS
Fenoxycarb	ND	0.2 ug/g	0.0239 ug/kg	0.2312 ug/kg	PASS
Fenpyroximate	ND	0.4 ug/g	0.0218 ug/kg	0.1682 ug/kg	PASS
Fipronil	ND	0.4 ug/g	0.0128 ug/kg	0.0588 ug/kg	PASS
Flonicamid	ND	1 ug/g	0.0195 ug/kg	0.232 ug/kg	PASS
Fludioxonil	ND	0.4 ug/g	0.0247 ug/kg	0.2581 ug/kg	PASS
Hexythiazox	ND	1 ug/g	0.0196 ug/kg	0.2382 ug/kg	PASS
Imazalil	ND	0.2 ug/g	0.0352 ug/kg	0.2793 ug/kg	PASS
Imidacloprid	ND	0.4 ug/g	0.0179 ug/kg	0.1708 ug/kg	PASS
Kresoxim Methyl	ND	0.4 ug/g	0.0178 ug/kg	0.1415 ug/kg	PASS
Malathion	ND	0.2 ug/g	0.0324 ug/kg	0.3928 ug/kg	PASS
Metalaxyl	ND	0.2 ug/g	0.0203 ug/kg	0.1924 ug/kg	PASS
Methiocarb	ND	0.2 ug/g	0.0254 ug/kg	0.2521 ug/kg	PASS
Methomyl	ND	0.4 ug/g	0.0347 ug/kg	0.2663 ug/kg	PASS
MGK-264	ND	0.2 ug/g	0.0315 ug/kg	0.302 ug/kg	PASS
Myclobutanil	ND	0.2 ug/g	0.0269 ug/kg	0.3158 ug/kg	PASS
Naled	ND	0.5 ug/g	0.0537 ug/kg	0.4003 ug/kg	PASS
Oxamyl	ND	1 ug/g	0.0261 ug/kg	0.2468 ug/kg	PASS
Paclobutrazol	ND	0.4 ug/g	0.0308 ug/kg	0.3071 ug/kg	PASS
Permethrins (Sum of Cis- and Trans-Permethrin)	ND	0.2 ug/g	0.0174 ug/kg	0.1639 ug/kg	PASS



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Phosmet	ND	0.2 ug/g	0.0265 ug/kg	0.2492 ug/kg	PASS
Prallethrin	ND	0.2 ug/g	0.0587 ug/kg	0.2245 ug/kg	PASS
Propiconazole	ND	0.4 ug/g	0.025 ug/kg	0.1633 ug/kg	PASS
Propoxur	ND	0.2 ug/g	0.0395 ug/kg	0.3395 ug/kg	PASS
Pyrethrins (Sum of Cinerin 1, Jasmolin 1, and Pyrethrin 1)	ND	1 ug/g			PASS
Pyrethrins Cinerin 1	ND	N/A			N/A
Pyrethrins Jasmolin 1	ND	N/A			N/A
Pyrethrins Pyrethrin 1	ND	N/A			N/A
Pyridaben	ND	0.2 ug/g	0.0308 ug/kg	0.2403 ug/kg	PASS
Spinosad	ND	0.2 ug/g	0.0197 ug/kg	0.1788 ug/kg	PASS
Spinosad A	ND	0.2 ug/g	0.0175 ug/kg	0.1501 ug/kg	PASS
Spinosad D	ND	0.2 ug/g	0.0052 ug/kg	0.0364 ug/kg	PASS
Spiromesifen	ND	0.2 ug/g	0.0232 ug/kg	0.2569 ug/kg	PASS
Spirotetramat	ND	0.2 ug/g	0.024 ug/kg	0.2254 ug/kg	PASS
Spiroxamine	ND	0.4 ug/g	0.031 ug/kg	0.2233 ug/kg	PASS
Tebuconazole	ND	0.4 ug/g	0.0382 ug/kg	0.3345 ug/kg	PASS
Thiacloprid	ND	0.2 ug/g	0.0258 ug/kg	0.2469 ug/kg	PASS
Thiamethoxam	ND	0.2 ug/g	0.0153 ug/kg	0.1458 ug/kg	PASS
Trifloxystrobin	ND	0.2 ug/g	0.0188 ug/kg	0.2121 ug/kg	PASS



LAB-TM-009 - DETERMINATION OF WATER ACTIVITY

AWA-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Water Activity	0.495 aw	0.65 Awa			PASS

LAB-TM-007 - FOREIGN MATTER AND FILTH ANALYSIS

FOR-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Inorganic Matter	0 %	Detection			PASS
Organic Matter	0 %	2 %			PASS
Stems	1 %	5 %			PASS
Total Foreign Matter	1 %	N/A			N/A

LAB-TM-015 - ENUMERATION OF TOTAL YEAST AND MOLD ON 3M RYM PLATES

TYM-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Yeast and Mold	4400 CFU/g	100000 CFU/g			PASS

LAB-TM-006 - MICROBIAL ANALYSIS BY QPCR

SS-CAN-231023-003-01 - MONDAY, OCT 23, 2023



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Salmonella Spp	ND	Detection			PASS
Shiga Toxin Producing E. coli	ND	Detection			PASS



