



Customer: Trade Roots

Address:

6 Thatcher Lane
 Wareham MA 02571

Phone: 774-326-0077

License #: MP281436 & MC281262



Sample ID: 12578
Sample Name: Apollo 13 - Bulk Flower
Sample Strain: Apollo 13
Sample Type: Flower
Received Date: 05/07/2024
Report Date: 05/12/2024
METRC ID: 1A40A0300006BD1000004763
METRC Source ID:
 1A40A0300006BD1000004754
Client Batch ID: AP13-050124-B1
Client Sample Size: 6 g

Certificate of Analysis



Results Summary

Cannabinoids

05/08/2024

TESTED

Terpenes Extended

05/09/2024

TESTED

Heavy Metals

05/08/2024

✓ PASS

Microbial Impurities

05/11/2024

✓ PASS

Mycotoxins

05/12/2024

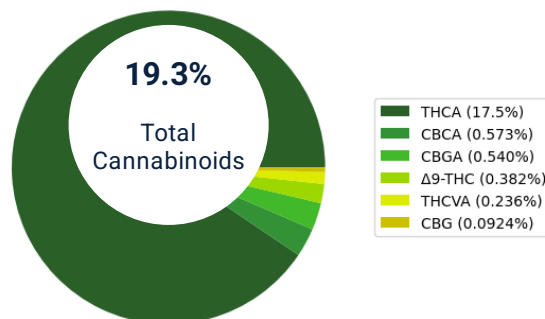
✓ PASS

Pesticides

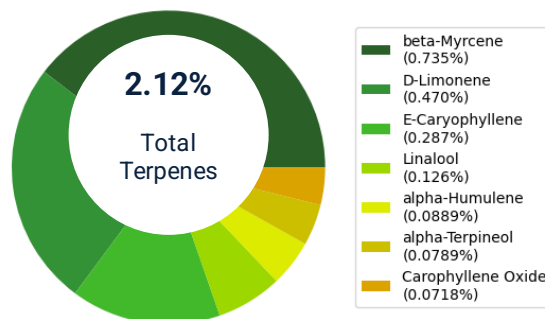
05/12/2024

✓ PASS

Cannabinoid Distribution (%)



Terpene Distribution (%)



Cannabinoids

Date Started: 05/07/2024
Instrument: UPLC-PDA

Date Completed: 05/08/2024
Method: TP-09.001.05 & TP-09.012.05

Analyst: Yueming Wang Kovaleff
Deviation: N/A

Cannabinoid	Result (%)	Result (mg/g)	LOD (%)	LOQ (%)
THCA	17.5	175	0.0926	0.579
CBCA	0.573	5.73	0.00745	0.0231
CBGA	0.540	5.40	0.00227	0.0289
Δ9-THC	0.382	3.82	0.0107	0.0579
THCVA	0.236	2.36	0.00246	0.0231
CBG	0.0924	0.924	0.00251	0.0289
CBDVA	ND	ND	0.00389	0.0231
CBDV	ND	ND	0.0111	0.0231
CBDA	ND	ND	0.00365	0.0579
CBD	ND	ND	0.00448	0.0579
Δ9-THCV	ND	ND	0.00312	0.0231
Δ8-THCV	ND	ND	0.00565	0.0231
CBN	ND	ND	0.00396	0.0289
CBNA	ND	ND	0.00306	0.0231
Exo-THC	ND	ND	0.00463	0.0231
Δ8-THC	ND	ND	0.0101	0.0289
CBL	ND	ND	0.00685	0.0231
CBC	ND	ND	0.00274	0.0231
Total THC	15.7	157		
Total CBD	ND	ND		
Total Cannabinoids	19.3	193		

Total THC = Δ9-THC + (THCA-A x 0.877)

Total CBD = CBD + (CBDA x 0.877)

Total Cannabinoids = Sum of all cannabinoids without THC/CBD corrections.

LOD = Limit of Detection; **LOQ** = Limit of Quantitation; **ND** = Not Detected.

Certificate of Analysis

Terpenes Extended

Date Started: 05/07/2024
Instrument: GC-MS

Date Completed: 05/09/2024
Method: TP-09.004.03

Analyst: Yuemin Wang Kovaleff
Deviation: N/A

Terpene	Result (%)	Result (mg/g)	LOD (%)	LOQ (%)
beta-Myrcene	0.735	7.35	0.000972	0.00579
D-Limonene	0.470	4.70	0.00122	0.00579
E-Caryophyllene	0.287	2.87	0.00254	0.00579
Linalool	0.126	1.26	0.00176	0.00579
alpha-Humulene	0.0889	0.889	0.00125	0.00579
alpha-Terpineol	0.0789	0.789	0.00219	0.00579
Carophyllene Oxide	0.0718	0.718	0.00131	0.00579
beta-Pinene	0.0633	0.633	0.00120	0.00579
Endo-Fenchyl Alcohol	0.0550	0.550	0.00193	0.00579
alpha-Pinene	0.0513	0.513	0.000486	0.00579
[+/-]-Borneol	0.0214	0.214	0.00224	0.0116
Z-beta-Ocimene	0.0196	0.196	0.00234	0.00579
Camphene	0.0137	0.137	0.000639	0.00579
E-beta-Ocimene	0.0131	0.131	0.00239	0.00579
Terpinolene	0.00858	0.0858	0.000722	0.00579
[+/-]-Fenchone	<LOQ	<LOQ	0.00128	0.0116
Sabinene Hydrate	<LOQ	<LOQ	0.00194	0.00579
alpha-Phellandrene	<LOQ	<LOQ	0.000903	0.00579
gamma-Terpineol	ND	ND	0.00104	0.00579
Isopulegol	ND	ND	0.00281	0.00579
Nerol	ND	ND	0.00182	0.00579
Geraniol	ND	ND	0.00180	0.00579
Pulegone	ND	ND	0.00219	0.00579
Valencene	ND	ND	0.00153	0.00579
Z-Nerolidol	ND	ND	0.00157	0.00579
E-Nerolidol	ND	ND	0.00132	0.00579
Guaiol	ND	ND	0.00126	0.00579
alpha-Bisabolol	ND	ND	0.00214	0.00579
Eucalyptol	ND	ND	0.00175	0.00579
Sabinene	ND	ND	0.00197	0.00579
Isoborneol	ND	ND	0.00124	0.00579
Menthol	ND	ND	0.00193	0.00579
alpha-Cedrene	ND	ND	0.00175	0.00579
Geranyl Acetate	ND	ND	0.00272	0.00579
Cedrol	ND	ND	0.00236	0.00579
[+,-]-Camphor	ND	ND	0.00428	0.0174
delta-3-Carene	ND	ND	0.00189	0.00579
alpha-Terpinene	ND	ND	0.00177	0.00579
gamma-Terpinene	ND	ND	0.00131	0.00579
Total Terpenes	2.12	21.2		

Heavy Metals

 **PASS**

Date Started: 05/07/2024
Instrument: ICP-MS

Date Completed: 05/08/2024
Method: TP-09.007.01

Analyst: Meagan Mattos
Deviation: N/A

Heavy Metals	Result (ppb)	LOD (ppb)	LOQ (ppb)	Limit (ppb)	Status
Arsenic	<LOQ	6.78	45.8	200	Pass
Cadmium	ND	4.07	45.8	200	Pass
Lead	56.1	3.74	45.8	500	Pass
Mercury	ND	3.26	22.9	100	Pass

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Certificate of Analysis

Microbial Impurities

✓ PASS

Date Started: 05/07/2024
Instrument: TEMPO & Gene-Up

Date Completed: 05/11/2024
Method: TP-09.010.01 & TP-09.011.01

Analyst: Meagan Mattos
Deviation: N/A

Microbials	Result (CFU/g)	Limit (CFU/g)	Status
Coliforms	ND	1000	Pass
Bile-Tolerant Gram-Negative Bacteria	ND	1000	Pass
Yeast & Mold	1200	10000	Pass
Aerobic Bacteria	ND	100000	Pass
E.coli	ND		Pass
Salmonella	ND		Pass

Mycotoxins

✓ PASS

Date Started: 05/08/2024
Instrument: LC-MS/MS

Date Completed: 05/12/2024
Method: TP-09.009.04

Analyst: Eric Steele
Deviation: N/A

Mycotoxins	Result (ppb)	LOD (ppb)	LOQ (ppb)	Limit (ppb)	Status
Aflatoxin B1	ND	1.95	4.79		
Aflatoxin B2	ND	0.386	3.59		
Aflatoxin G1	ND	0.400	3.59		
Aflatoxin G2	ND	1.02	4.79		
Ochratoxin A	ND	1.11	3.59		
Total Mycotoxins	ND	0.386	3.59	20.0	Pass

Pesticides

✓ PASS

Date Started: 05/08/2024
Instrument: LC-MS/MS & GC-MS/MS

Date Completed: 05/12/2024
Method: TP-09.008.02 & TP-09.009.04

Analyst: Yüemin Wang Kovaleff
Deviation: N/A

Pesticide	Result (ppb)	LOD (ppb)	LOQ (ppb)	Limit (ppb)	Status
Bifenazate	ND	0.594	3.59	10.0	Pass
Bifenthrin	ND	1.26	3.59	10.0	Pass
Cyfluthrin	ND	0.477	2.99	10.0	Pass
Etoxazole	ND	0.872	3.59	10.0	Pass
Imazalil	ND	0.896	3.59	10.0	Pass
Imidacloprid	ND	0.419	3.59	10.0	Pass
Myclobutanil	ND	0.984	3.59	10.0	Pass
Spiromesifen	ND	1.05	3.59	10.0	Pass
Trifloxystrobin	ND	0.553	3.59	10.0	Pass



Eric Steele, Lab Director
05/12/2024

END OF REPORT

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