Arkansas Location
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Oklahoma Location
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Telephone: (405) 595-0344
Email Address: Info@FASTLaboratories.com

CERTIFICATE OF ANALYSIS

Project: Medical Cannabis
Order ID: 2018000408
Customer ID: 54755766
Customer Name: CBD Plus USA
Harvest/Extract Lot: 11132018M
Harvest/Extract Date: 11/13/2018

Cultivar (Strain): OK Sun Grown
Sample Date: 12/03/2018
Lab ID: 2018000981
Date Received: 12/03/2018
Sample Matrix: Flower
Date Completed: 12/07/2018

Remarks:

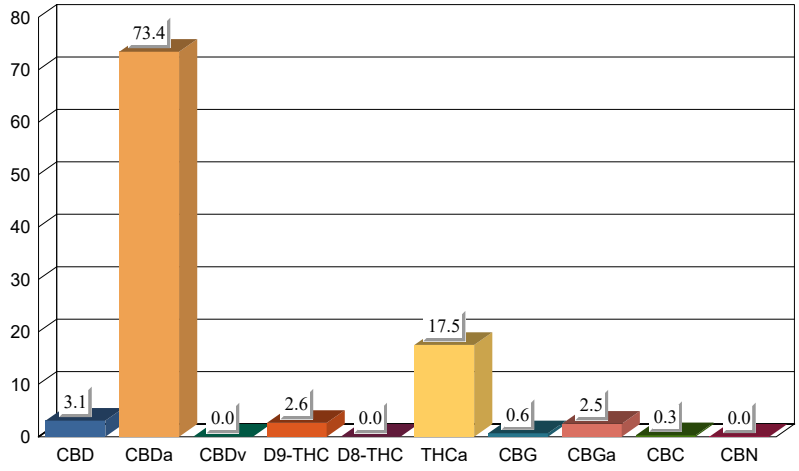
Analysis Date/Time: 12-05-2018 0245
Analyst: KWF
Method: HPLC/UV
Instrument: Agilent 1100
Moisture Content (%): 7.81
Water Activity (aw): 0.5849 at 25.01ºC

Cannabinoid	Result (%)	Result (mg/g)	Reporting Limit (mg/g)	Per Unit (mg)
CBD	0.563	5.63	0.050	5.63
CBDa	13.5	135	0.050	135
CBDv	<RL	<RL	0.050	-
Δ9-THC	0.486	4.86	0.050	4.86
Δ8-THC	<RL	<RL	0.050	-
THCa	3.23	32.3	0.050	32.3
CBC	0.0509	0.509	0.050	0.510
CBG	0.119	1.19	0.050	1.19
CBGa	0.454	4.54	0.050	4.54
CBN	<RL	<RL	0.050	-
TOTAL	18.4	184		184
TOTAL THC	3.32	33.2		33.2
TOTAL CBD	12.4	124		124

UNIT MASS (g): 1.00

Cannabinoid Distribution

(% of Total Cannabinoids)



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 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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Kyle W. Felling, Ph.D.
Laboratory Director

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Sample Matrix: Flower
Date Completed: 12/07/2018

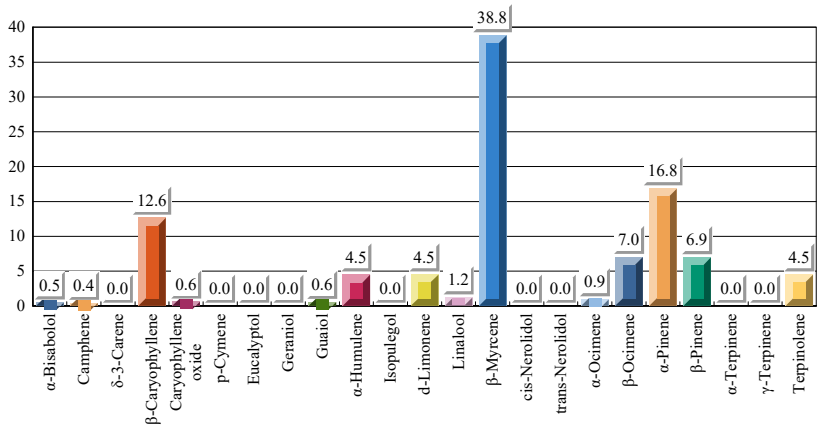
TERPENOID PROFILE

Analysis Date/Time: 12-06-2018 1732
Analyst: KWF
Method: HS/GC/MS (Internal Method-002)
Instrument: Agilent 7890/5975
Deviations from SOP: None

Terpene	Result (µg/g)	Result (%, total terpenes)
α-Bisabolol	87.3	0.488
Camphene	77.5	0.433
δ-3-Carene	-	-
β-Caryophyllene	2259	12.6
Caryophyllene oxide	111	0.622
p-Cymene	-	-
Eucalyptol	-	-
Geraniol	-	-
Guaiol	103	0.576
α-Humulene	802	4.48
Isopulegol	-	-
d-Limonene	803	4.49
Linalool	215	1.20
β-Myrcene	6950	38.8
cis-Nerolidol	-	-
trans-Nerolidol	-	-
α-Ocimene	168	0.938
β-Ocimene	1258	7.03
α-Pinene	3012	16.8
β-Pinene	1243	6.95
α-Terpinene	-	-
γ-Terpinene	-	-
Terpinolene	805	4.50
TOTAL	17894	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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"-" not detected above reporting limit

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Remarks:
Sample Matrix: Flower
Date Completed: 12/07/2018

HEAVY METALS PROFILE

Analysis Date/Time: 12-04-2018 1034
Analyst: KWF
Method: ICP-OES (EPA 200.7)
Instrument: Agilent 720-ES
Deviations from SOP: None

Heavy Metal	Result (µg/kg)	Action Level (µg/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 (µg/kg)
50

"-" not detected above reporting limit

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Harvest/Extract Date: 11/13/2018

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Date Received: 12/03/2018
Remarks:
Sample Matrix: Flower
Date Completed: 12/07/2018

MICROBIOLOGICAL PROFILE

Analysis Date/Time: 12-05-2018 0800
Analyst: KWF
Method: Hardy Diagnostics CompactDry
Instrument: Plate/Incubation (35ºC)
Deviations from SOP: None

Bacteria/Microbe	Result (CFU/mL)	Action Level (CFU/mL)
Coliforms, Total	Absent	100
Escherichia Coli (E. Coli)	Absent	1
Yeast	Absent	1000
Mold	500	1000
Salmonella spp.		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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CERTIFICATE OF ANALYSIS

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Order ID: 2018000408
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Customer Name: CBD Plus USA
Harvest/Extract Lot: 11132018M
Harvest/Extract Date: 11/13/2018

Cultivar (Strain): OK Sun Grown
Sample Date: 12/03/2018
Lab ID: 2018000981
Date Received: 12/03/2018
Remarks:
Sample Matrix: Flower
Date Completed: 12/07/2018

PESTICIDE PROFILE

Analysis Date/Time: 12-06-2018 1458
Analyst: KWF
Method: LC/MS/MS and GC/MS
Instrument: Waters TQD and Agilent 7890/5975
Deviations from SOP: None

Pesticide	Result (µg/g)	Action Level (µg/g)	Pesticide	Result (µg/g)	Action Level (µg/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	Metalaxyl* (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
Flonicamid (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 (µg/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

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

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		

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

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