

324.2 - DJ Short Blueberry RSO 1.5.19

Farmer's Friend Extracts
 6451 NE Colwood Wy
 Portland, OR 97218
 503-442-8653

Sample Type: Extracts
 Sample Date: 1/6/2020
 Analysis Date: 1/7/2020
 Report Date: 1/10/2020

Metric Batch ID:
 1A4010300016315000020850
 Metric Sample ID:
 1A4010300016315000020885

Harvest/Process Date: 1/5/2020
 Report ID:
LS-200110-13

Potency

Potency Analysis Date: 1/8/2020
 Potency Batch ID: CAN_010820C
 Potency Method: JAOAC 2015.1

81.0%

Total
THC

1.04%




Total
CBD

Samples: ZBN-ZXB-HCH, CSM-WSN-TSM



Analyte	Description	LOQ	RPD	Min.	Max.	Avg.	Unit: %
Δ9THC	Delta-9 Tetrahydrocannabinol	0.16	3.36	79.7	82.4	81.0	
THCA	Tetrahydrocannabinolic acid	0.16	0.00	ND	<LOQ	<LOQ	
CBD	Cannabidiol	0.16	3.63	1.02	1.06	1.04	
CBDA	Cannabidiolic acid	0.16	0.00	ND	<LOQ	<LOQ	
Δ8THC	Delta-8 Tetrahydrocannabinol*	0.16	0.00	ND	ND	ND	
THCV	Tetrahydrocannabivarin*	0.16	20.0	0.372	0.455	0.413	
CBG	Cannabigerol*	0.16	7.10	1.98	2.12	2.05	
CBGA	Cannabigerolic acid*	0.16	26.7	0.330	0.432	0.381	
CBC	Cannabichromene*	0.16	4.79	2.56	2.69	2.62	
CBCA	Cannabichromenic acid*	0.16	29.7	ND	0.216	0.108	
CBN	Cannabinol	0.16	21.0	0.396	0.488	0.442	
Total THC	Δ9THC + (THCA × 0.877)		3.36	79.7	82.4	81.0	
Total CBD	CBD + (CBDA × 0.877)		3.63	1.02	1.06	1.04	
Total			2.97	86.3	89.8	88.1	

Compliance

Pesticides	Within limits	Analysis Date: 1/8/2020	Pass 
Solvents	Within limits	Analysis Date: 1/9/2020	Pass 
Potency	Within limits	Analysis Date: 1/8/2020	Pass 


 Bryce Kidd, Ph.D.
 Lab Director


 Aaron Troyer
 Chief Science Officer



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Terpene Analysis Date: 1/7/2020
 Terpene Batch ID: TRP_010720A

Method: JAOAC 2015.1
 Unit: %

Analyte	Avg.	Notes	Analyte	Avg.	Notes
β-Caryophyllene	0.667%		Valencene	ND	
β-Farnesene 2	0.594%		cis-Nerolidol	ND	
Humulene	0.254%		trans-Nerolidol	ND	
α-Bisabolol	0.151%		Δ3-Carene	ND	
α-Terpineol	0.0381%		α-Cedrene	ND	
Selinadiene	0.0180%		α-OCimene	ND	
Isoborneol	0.00873%		α-Phellandrene	ND	
Linalool	0.00270%		α-Terpinene	ND	
Limonene	0.000852%		β-Farnesene 1	ND	
α-Pinene	0.000426%		β-Myrcene	ND	
Azulene	ND		β-OCimene	ND	
Borneol	ND		β-Pinene	ND	
Camphene	ND		γ-Terpinene	ND	
Camphore	ND		γ-Terpineol	ND	
Caryophyllene Oxide	ND		Total	1.73%	
Cedrol	ND				
Cymene	ND				
Eucalyptol	ND				
Fenchol	ND				
Fenchone	ND				
Geraniol	ND				
Geranyl Acetate	ND				
Guaiol	ND				
Isopulegol	ND				
Nerol	ND				
Pulegone	ND				
Sabinene	ND				
Sabinene Hydrate	ND				
Terpinolene	ND				

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Pesticides Analysis Date: 1/8/2020
 Pesticides Batch ID: PST_010820A

Method: EN 15662
 Unit: µg/g (ppm)

Pass 

Analyte	ZBN-ZXB-HCH	CSM-WSN-TSM	Limits	LOQ	Notes	Status	Analyte	ZBN-ZXB-HCH	CSM-WSN-TSM	Limits	LOQ	Notes	Status
Abamectin	ND	ND	0.5	0.1		Pass	Metalaxyl	ND	ND	0.2	0.1		Pass
Acephate	ND	ND	0.4	0.1		Pass	Methiocarb	ND	ND	0.2	0.1		Pass
Acequinocyl	ND	ND	2.0	1.5		Pass	Methomyl	ND	ND	0.4	0.1		Pass
Acetamiprid	ND	ND	0.2	0.1		Pass	Methyl Parathion	ND	ND	0.2	0.2		Pass
Aldicarb	ND	ND	0.4	0.1		Pass	MGK-264	ND	ND	0.2	0.2		Pass
Azoxystrobin	ND	ND	0.2	0.1		Pass	Myclobutanil	ND	ND	0.2	0.1		Pass
Bifenazate	ND	ND	0.2	0.1		Pass	Naled	ND	ND	0.5	0.2		Pass
Bifenthrin	ND	ND	0.2	0.1		Pass	Oxamyl	ND	ND	1.0	0.1		Pass
Boscalid	ND	ND	0.4	0.1		Pass	Paclobutrazol	ND	ND	0.4	0.1		Pass
Carbaryl	ND	ND	0.2	0.1		Pass	Permethrins	ND	ND	0.2	0.1		Pass
Carbofuran	ND	ND	0.2	0.1		Pass	Phosmet	ND	ND	0.2	0.1		Pass
Chlorantraniliprole	ND	ND	0.2	0.1		Pass	Piperonyl Butoxide	ND	ND	2.0	0.1		Pass
Chlorfenapyr	ND	ND	1.0	0.1		Pass	Prallethrin	ND	ND	0.2	0.1		Pass
Chlorpyrifos	ND	ND	0.2	0.1		Pass	Propiconazole	ND	ND	0.4	0.1		Pass
Clofentezine	ND	ND	0.2	0.1		Pass	Propoxur	ND	ND	0.2	0.1		Pass
Cyfluthrin	ND	ND	1.0	0.5		Pass	Pyrethrins	ND	ND	1.0	0.5		Pass
Cypermethrin	ND	ND	1.0	0.1		Pass	Pyridaben	ND	ND	0.2	0.1		Pass
Daminozide	ND	ND	1.0	0.5		Pass	Spinosad	ND	ND	0.2	0.1		Pass
Diazinon	ND	ND	0.2	0.1		Pass	Spiromesifen	ND	ND	0.2	0.1		Pass
Dichlorvos (DDVP)	ND	ND	1.0	0.5		Pass	Spirotetramat	ND	ND	0.2	0.1		Pass
Dimethoate	ND	ND	0.2	0.1		Pass	Spiroxamine	ND	ND	0.4	0.1		Pass
Ethoprophos	ND	ND	0.2	0.1		Pass	Tebuconazole	ND	ND	0.4	0.1		Pass
Etofenprox	ND	ND	0.4	0.1		Pass	Thiacloprid	ND	ND	0.2	0.1		Pass
Etoxazole	ND	ND	0.2	0.1		Pass	Thiamethoxam	ND	ND	0.2	0.1		Pass
Fenoxycarb	ND	ND	0.2	0.1		Pass	Trifloxystrobin	ND	ND	0.2	0.1		Pass
Fenpyroximate	ND	ND	0.4	0.1		Pass							
Fipronil	ND	ND	0.4	0.1		Pass							
Flonicamid	ND	ND	1.0	0.1		Pass							
Fludioxonil	ND	ND	0.4	0.1		Pass							
Hexythiazox	ND	ND	1.0	0.1		Pass							
Imazalil	ND	ND	0.2	0.1		Pass							
Imidacloprid	ND	ND	0.4	0.1		Pass							
Kresoxim-methyl	ND	ND	0.4	0.1		Pass							
Malathion	ND	ND	0.2	0.1		Pass							

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Pesticides Quality Control Data

Pesticides QC Analysis Date: 1/8/2020
 Pesticides QC Batch ID: PST_010820A

Method: EN 15662
 Unit: µg/g (ppm)

Analyte	Blank	LOQ	LCS	LCS Spike	LCS Rec (%)	Limits (%)	Notes	Analyte	Blank	LOQ	LCS	LCS Spike	LCS Rec (%)	Limits (%)	Notes
Abamectin	ND	0.1	0.876	1.00	87.6	50 - 150		Metalaxyl	ND	0.1	1.00	1.00	100	50 - 150	
Acephate	ND	0.1	0.686	1.00	68.6	50 - 150		Methiocarb	ND	0.1	0.979	1.00	97.9	50 - 150	
Acequinocyl	ND	1.5	0.536	1.00	53.6	50 - 150		Methomyl	ND	0.1	0.931	1.00	93.1	50 - 150	
Acetamiprid	ND	0.1	0.986	1.00	98.6	50 - 150		Methyl Parathion	ND	0.2	0.752	1.00	75.2	30 - 150	
Aldicarb	ND	0.1	0.967	1.00	96.7	50 - 150		MGK-264	ND	0.2	0.674	0.600	112	50 - 150	
Azoxystrobin	ND	0.1	1.01	1.00	101	50 - 150		Myclobutanil	ND	0.1	1.04	1.00	104	50 - 150	
Bifenazate	ND	0.1	ND	1.00	1.00	50 - 150	LR	Naled	ND	0.2	0.894	1.00	89.4	50 - 150	
Bifenthrin	ND	0.1	0.825	1.00	82.5	50 - 150		Oxamyl	ND	0.1	0.928	1.00	92.8	50 - 150	
Boscalid	ND	0.1	0.897	1.00	89.7	50 - 150		Paclobutrazol	ND	0.1	0.937	1.00	93.7	50 - 150	
Carbaryl	ND	0.1	0.938	1.00	93.8	50 - 150		Permethrins	ND	0.1	0.850	1.00	85.0	50 - 150	
Carbofuran	ND	0.1	0.973	1.00	97.3	50 - 150		Phosmet	ND	0.1	0.995	1.00	99.5	50 - 150	
Chlorantraniliprole	ND	0.1	0.940	1.00	94.0	50 - 150		Piperonyl Butoxide	ND	0.1	0.925	1.00	92.5	50 - 150	
Chlorfenapyr	ND	0.1	0.973	1.00	97.3	50 - 150		Prallethrin	ND	0.1	0.990	1.00	99.0	50 - 150	
Chlorpyrifos	ND	0.1	0.953	1.00	95.3	50 - 150		Propiconazole	ND	0.1	0.986	1.00	98.6	50 - 150	
Clofentezine	ND	0.1	0.833	1.00	83.3	50 - 150		Propoxur	ND	0.1	1.02	1.00	102	50 - 150	
Cyfluthrin	ND	0.5	0.996	1.00	99.6	50 - 150		Pyrethrins	ND	0.5	0.958	1.00	95.8	50 - 150	
Cypermethrin	ND	0.1	0.900	1.00	90.0	50 - 150		Pyridaben	ND	0.1	0.858	1.00	85.8	50 - 150	
Daminozide	ND	0.5	ND	1.00	0.00	10 - 150	ND	Spinosad	ND	0.1	0.770	1.00	77.0	50 - 150	
Diazinon	ND	0.1	1.03	1.00	103	50 - 150		Spiromesifen	ND	0.1	0.940	1.00	94.0	50 - 150	
Dichlorvos (DDVP)	ND	0.5	0.851	1.00	85.1	50 - 150		Spirotetramat	ND	0.1	1.04	1.00	104	50 - 150	
Dimethoate	ND	0.1	0.928	1.00	92.8	50 - 150		Spiroxamine	ND	0.1	0.327	1.00	32.7	50 - 150	LR
Ethofenphos	ND	0.1	1.01	1.00	101	50 - 150		Tebuconazole	ND	0.1	1.09	1.00	109	50 - 150	
Etofenprox	ND	0.1	0.815	1.00	81.5	50 - 150		Thiacloprid	ND	0.1	1.02	1.00	102	50 - 150	
Etoxazole	ND	0.1	0.897	1.00	89.7	50 - 150		Thiamethoxam	ND	0.1	1.04	1.00	104	50 - 150	
Fenoxycarb	ND	0.1	0.983	1.00	98.3	50 - 150		Trifloxystrobin	ND	0.1	0.985	1.00	98.5	50 - 150	
Fenpyroximate	ND	0.1	0.859	1.00	85.9	50 - 150									
Fipronil	ND	0.1	0.996	1.00	99.6	50 - 150									
Flonicamid	ND	0.1	0.940	1.00	94.0	50 - 150									
Fludioxonil	ND	0.1	0.951	1.00	95.1	50 - 150									
Hexythiazox	ND	0.1	0.919	1.00	91.9	50 - 150									
Imazalil	ND	0.1	0.997	1.00	99.7	50 - 150									
Imidacloprid	ND	0.1	0.958	1.00	95.8	50 - 150									
Kresoxim-methyl	ND	0.1	1.02	1.00	102	50 - 150									
Malathion	ND	0.1	1.04	1.00	104	50 - 150									

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 Metric Sample ID:
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Harvest/Process Date: 1/5/2020
 Report ID:
LS-200110-13

Residual Solvents Sample Data

Solvents Analysis Date: 1/9/2020
 Solvents Batch ID: RES_010820A

Method: EPA 5021A
 Unit: µg/g (ppm)

Pass 

Analyte	ZBN-ZXB-HCH	CSM-WSN-TSM	RPD (%)	Limits	LOQ	Notes	Status
1,4-Dioxane	ND	ND	0.00	380.0	50.0		Pass
2-Butanol	ND	ND	0.00	5000.0	250.0		Pass
2-Ethoxyethanol	ND	ND	0.00	160.0	50.0		Pass
Acetone	ND	ND	0.00	5000.0	250.0		Pass
Acetonitrile	ND	ND	0.00	410.0	50.0		Pass
Benzene	ND	ND	0.00	2.0	2.0		Pass
Butanes	ND	ND	0.00	5000.0	250.0		Pass
Cumene	ND	ND	0.00	70.0	50.0		Pass
Cyclohexane	ND	ND	0.00	3880.0	50.0		Pass
Ethyl Acetate	ND	ND	0.00	5000.0	250.0		Pass
Ethyl Ether	ND	ND	0.00	5000.0	250.0		Pass
Ethylene Glycol	ND	ND	0.00	620.0	250.0		Pass
Ethylene Oxide	ND	ND	0.00	50.0	50.0		Pass
Heptane	ND	ND	0.00	5000.0	250.0		Pass
Hexanes	ND	ND	0.00	290.0	50.0		Pass
Isopropanol (2-Propanol)	ND	ND	0.00	5000.0	50.0		Pass
Isopropyl Acetate	ND	ND	0.00	5000.0	250.0		Pass
Methanol	ND	ND	0.00	3000.0	250.0		Pass
Dichloromethane	ND	ND	0.00	600.0	50.0		Pass
Pentanes	ND	ND	0.00	5000.0	250.0		Pass
Propane	ND	ND	0.00	5000.0	250.0		Pass
Tetrahydrofuran	ND	ND	0.00	720.0	50.0		Pass
Toluene	ND	ND	0.00	890.0	50.0		Pass
Xylenes	ND	ND	0.00	2170.0	50.0		Pass

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Residual Solvents Quality Control Data

Solvents QC Analysis Date: 1/9/2020
 Solvents QC Batch ID: RES_010820A

Method: EPA 5021A
 Unit: µg/g (ppm)

Analyte	Blank	LOQ	LCS	LCS Spike	LCS Rec (%)	Limits (%)	Notes
1,4-Dioxane	ND	50.0	953	1000	95.3	70 - 130	
2-Butanol	ND	250.0	939	1000	93.9	70 - 130	
2-Ethoxyethanol	ND	50.0	889	1000	88.9	70 - 130	
Acetone	ND	250.0	879	1000	87.9	70 - 130	
Acetonitrile	ND	50.0	932	1000	93.2	70 - 130	
Benzene	ND	2.0	17.4	20.0	87.2	70 - 130	
Butanes	ND	250.0	1510	2000	75.7	70 - 130	
Cumene	ND	50.0	965	1000	96.5	70 - 130	
Cyclohexane	ND	50.0	857	1000	85.7	70 - 130	
Ethyl Acetate	ND	250.0	914	1000	91.4	70 - 130	
Ethyl Ether	ND	250.0	833	1000	83.3	70 - 130	
Ethylene Glycol	ND	250.0	902	1000	90.2	70 - 130	
Ethylene Oxide	ND	50.0	857	1000	85.7	70 - 130	
Heptane	ND	250.0	844	1000	84.4	70 - 130	
Hexanes	ND	50.0	4160	5000	83.2	70 - 130	
Isopropanol (2-Propanol)	ND	50.0	934	1000	93.4	70 - 130	
Isopropyl Acetate	ND	250.0	918	1000	91.8	70 - 130	
Methanol	ND	250.0	861	1000	86.1	70 - 130	
Dichloromethane	ND	50.0	883	1000	88.3	70 - 130	
Pentanes	ND	250.0	2370	3000	79.1	70 - 130	
Propane	ND	250.0	654	1000	65.4	70 - 130	
Tetrahydrofuran	ND	50.0	905	1000	90.5	70 - 130	
Toluene	ND	50.0	923	1000	92.3	70 - 130	
Xylenes	ND	50.0	3860	4000	96.5	70 - 130	

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Qualifier Flag Descriptions

J	Reported result is an estimate - the value is less than the minimum calibration level but greater than the estimated detection limit (EDL)
U	The analyte was not detected in the sample at the estimated detection limit (EDL)
E	Exceeds calibration range
D	Dilution data - result was obtained from the analysis of a dilution
B	Analyte found in sample and associated blank
C	Co-eluting compound
R	Relative Percent Difference (RPD) outside control limits
NR	Analyte not reported because of problems in sample preparation or analysis
ND	Non-Detect
X	Results from reinjection/repeat/re-column data
EMC	Estimated maximum possible concentration - indicates that a peak is detected but did not meet the method required criteria
M	Manual integration
PS	Peaks split
HB	Control acceptance criteria are exceeded high and the associated sample is below the detection limit
LB	Control acceptance criteria are exceeded low and the associated sample exceeds the regulatory limit
ME	Marginal Exceedance
LR	Low Recovery Analyte
LOQ	Limit of Quantitation