

282 - Dr. Who RCO 9.24.19

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

Sample Type: Extracts
 Sample Date: 9/25/2019
 Analysis Date: 9/26/2019
 Report Date: 9/27/2019

Metric Batch ID:
 1A4010300016315000015728
 Metric Sample ID:
 1A4010300016315000015829

Harvest/Process Date: 9/24/2019
 Report ID:
LS-190927-17

Potency

Potency Analysis Date: 9/26/2019
 Potency Batch ID: CAN_092619C
 Potency Method: JAOAC 2015.1

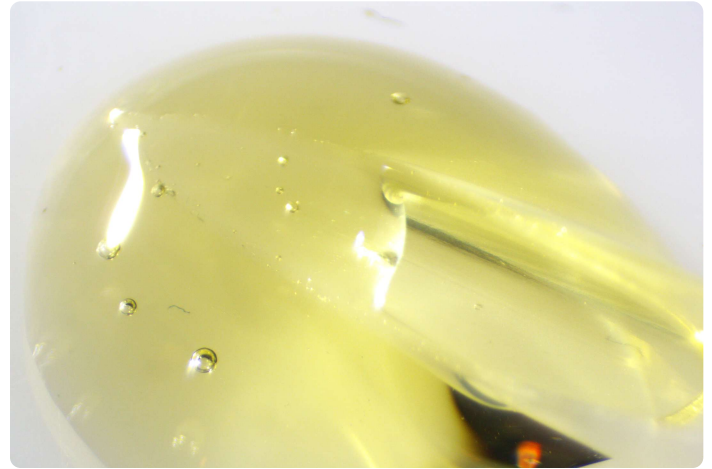
79.2%

Total
THC

0.102%




Total
CBD

Samples: NWG-BNG-NBH, MBN-HSB-FZH



Analyte	Description	LOQ	RPD	Min.	Max.	Avg.	Unit: %
Δ9THC	Delta-9 Tetrahydrocannabinol	0.16	1.65	78.5	79.8	79.2	
THCA	Tetrahydrocannabinolic acid	0.16	12.7	ND	0.182	0.0909	
CBD	Cannabidiol	0.16	24.0	ND	0.204	0.102	
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	2.91	2.70	2.78	2.74	
CBG	Cannabigerol*	0.16	5.36	2.37	2.50	2.44	
CBGA	Cannabigerolic acid*	0.16	0.00	ND	<LOQ	<LOQ	
CBC	Cannabichromene*	0.16	12.5	1.51	1.71	1.61	
CBCA	Cannabichromenic acid*	0.16	0.00	ND	ND	ND	
CBN	Cannabinol	0.16	44.8	0.340	0.536	0.438	
Total THC	Δ9THC + (THCA × 0.877)		1.45	78.5	80.0	79.2	
Total CBD	CBD + (CBDA × 0.877)		24.0	ND	0.204	0.102	
Total			0.363	85.4	87.7	86.6	

Compliance

Pesticides	Within limits	Analysis Date: 9/26/2019	Pass 
Solvents	Within limits	Analysis Date: 9/26/2019	Pass 
Potency	Within limits	Analysis Date: 9/26/2019	Pass 


 Bryce Kidd, Ph.D.
 Lab Director


 Aaron Troyer
 Chief Science Officer



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Terpene Analysis Date: 9/27/2019
 Terpene Batch ID: TRP_092619A

Method: JAOAC 2015.1
 Unit: %

Analyte	Avg.	Notes	Analyte	Avg.	Notes
β-Myrcene	1.44%		Valencene	ND	
Linalool	0.449%		cis-Nerolidol	ND	
Limonene	0.312%		trans-Nerolidol	ND	
α-Terpineol	0.201%		Δ3-Carene	ND	
Humulene	0.180%		α-Bisabolol	ND	
β-Ocimene	0.157%		α-Cedrene	ND	
β-Pinene	0.0835%		α-Ocimene	ND	
α-Pinene	0.0684%		α-Phellandrene	ND	
Terpinolene	0.0388%		α-Terpinene	ND	
Borneol	0.0117%		β-Caryophyllene	ND	
Azulene	ND		β-Farnesene 1	ND	
Camphene	ND		β-Farnesene 2	ND	
Camphore	ND		γ-Terpinene	ND	
Caryophyllene Oxide	ND		γ-Terpineol	ND	
Cedrol	ND		Total	2.94%	
Cymene	ND				
Eucalyptol	ND				
Fenchol	ND				
Fenchone	ND				
Geraniol	ND				
Geranyl Acetate	ND				
Guaiol	ND				
Isoborneol	ND				
Isopulegol	ND				
Nerol	ND				
Pulegone	ND				
Sabinene	ND				
Sabinene Hydrate	ND				
Selinadiene	ND				

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Pesticides Analysis Date: 9/26/2019
 Pesticides Batch ID: PST_092619A

Method: EN 15662
 Unit: µg/g (ppm)

Pass 

Analyte	MBN-HSB-FZH	NWG-BNG-NBH	Limits	LOQ	Notes	Status	Analyte	MBN-HSB-FZH	NWG-BNG-NBH	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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Harvest/Process Date: 9/24/2019
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Pesticides Quality Control Data

Pesticides QC Analysis Date: 9/26/2019
 Pesticides QC Batch ID: PST_092619A

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	0.971	1.00	97.1	50 - 150		Metalaxyl	ND	0.1	1.07	1.00	107	50 - 150	
Acephate	ND	0.1	0.776	1.00	77.6	50 - 150		Methiocarb	ND	0.1	1.08	1.00	108	50 - 150	
Acequinocyl	ND	1.5	0.919	1.00	91.9	50 - 150		Methomyl	ND	0.1	0.994	1.00	99.4	50 - 150	
Acetamiprid	ND	0.1	0.997	1.00	99.7	50 - 150		Methyl Parathion	ND	0.2	0.391	1.00	39.1	30 - 150	
Aldicarb	ND	0.1	1.02	1.00	102	50 - 150		MGK-264	ND	0.2	0.745	0.600	124	50 - 150	
Azoxystrobin	ND	0.1	1.10	1.00	110	50 - 150		Myclobutanil	ND	0.1	1.02	1.00	102	50 - 150	
Bifenazate	ND	0.1	1.28	1.00	128	50 - 150		Naled	ND	0.2	1.10	1.00	110	50 - 150	
Bifenthrin	ND	0.1	0.934	1.00	93.4	50 - 150		Oxamyl	ND	0.1	0.992	1.00	99.2	50 - 150	
Boscalid	ND	0.1	1.15	1.00	115	50 - 150		Paclobutrazol	ND	0.1	0.975	1.00	97.5	50 - 150	
Carbaryl	ND	0.1	1.06	1.00	106	50 - 150		Permethrins	ND	0.1	0.961	1.00	96.1	50 - 150	
Carbofuran	ND	0.1	1.05	1.00	105	50 - 150		Phosmet	ND	0.1	1.15	1.00	115	50 - 150	
Chlorantraniliprole	ND	0.1	1.03	1.00	103	50 - 150		Piperonyl Butoxide	ND	0.1	1.05	1.00	105	50 - 150	
Chlorfenapyr	ND	0.1	0.985	1.00	98.5	50 - 150		Prallethrin	ND	0.1	1.04	1.00	104	50 - 150	
Chlorpyrifos	ND	0.1	0.974	1.00	97.4	50 - 150		Propiconazole	ND	0.1	1.07	1.00	107	50 - 150	
Clofentezine	ND	0.1	0.949	1.00	94.9	50 - 150		Propoxur	ND	0.1	1.01	1.00	101	50 - 150	
Cyfluthrin	ND	0.5	1.50	1.00	150	50 - 150		Pyrethrins	ND	0.5	0.525	1.00	52.5	50 - 150	
Cypermethrin	ND	0.1	1.00	1.00	100	50 - 150		Pyridaben	ND	0.1	0.985	1.00	98.5	50 - 150	
Daminozide	ND	0.5	ND	1.00	0.00	10 - 150	ND	Spinosad	ND	0.1	0.821	1.00	82.1	50 - 150	
Diazinon	ND	0.1	1.01	1.00	101	50 - 150		Spiromesifen	ND	0.1	1.01	1.00	101	50 - 150	
Dichlorvos (DDVP)	ND	0.5	0.966	1.00	96.6	50 - 150		Spirotetramat	ND	0.1	1.05	1.00	105	50 - 150	
Dimethoate	ND	0.1	0.990	1.00	99.0	50 - 150		Spiroxamine	ND	0.1	0.662	1.00	66.2	50 - 150	
Ethoprophos	ND	0.1	0.897	1.00	89.7	50 - 150		Tebuconazole	ND	0.1	0.982	1.00	98.2	50 - 150	
Etofenprox	ND	0.1	0.953	1.00	95.3	50 - 150		Thiacloprid	ND	0.1	1.07	1.00	107	50 - 150	
Etoxazole	ND	0.1	0.979	1.00	97.9	50 - 150		Thiamethoxam	ND	0.1	0.954	1.00	95.4	50 - 150	
Fenoxycarb	ND	0.1	0.998	1.00	99.8	50 - 150		Trifloxystrobin	ND	0.1	1.04	1.00	104	50 - 150	
Fenpyroximate	ND	0.1	1.05	1.00	105	50 - 150									
Fipronil	ND	0.1	1.06	1.00	106	50 - 150									
Flonicamid	ND	0.1	0.894	1.00	89.4	50 - 150									
Fludioxonil	ND	0.1	1.12	1.00	112	50 - 150									
Hexythiazox	ND	0.1	1.05	1.00	105	50 - 150									
Imazalil	ND	0.1	0.919	1.00	91.9	50 - 150									
Imidacloprid	ND	0.1	0.991	1.00	99.1	50 - 150									
Kresoxim-methyl	ND	0.1	1.07	1.00	107	50 - 150									
Malathion	ND	0.1	1.07	1.00	107	50 - 150									

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Residual Solvents Sample Data

Solvents Analysis Date: 9/26/2019
 Solvents Batch ID: RES_092619A

Method: EPA 5021A
 Unit: µg/g (ppm)

Pass 

Analyte	MBN-HSB-FZH	NWG-BNG-NBH	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)	<LOQ	<LOQ	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: 9/26/2019
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Method: EPA 5021A
 Unit: µg/g (ppm)

Analyte	Blank	LOQ	LCS	LCS Spike	LCS Rec (%)	Limits (%)	Notes
1,4-Dioxane	ND	50.0	924	1000	92.4	70 - 130	
2-Butanol	ND	250.0	1010	1000	101	70 - 130	
2-Ethoxyethanol	ND	50.0	979	1000	97.9	70 - 130	
Acetone	ND	250.0	910	1000	91.0	70 - 130	
Acetonitrile	ND	50.0	1020	1000	102	70 - 130	
Benzene	ND	2.0	17.7	20.0	88.6	70 - 130	
Butanes	ND	250.0	1830	2000	91.5	70 - 130	
Cumene	ND	50.0	1020	1000	102	70 - 130	
Cyclohexane	ND	50.0	880	1000	88.0	70 - 130	
Ethyl Acetate	ND	250.0	965	1000	96.5	70 - 130	
Ethyl Ether	ND	250.0	886	1000	88.6	70 - 130	
Ethylene Glycol	ND	250.0	807	1000	80.7	70 - 130	
Ethylene Oxide	ND	50.0	882	1000	88.2	70 - 130	
Heptane	ND	250.0	951	1000	95.1	70 - 130	
Hexanes	ND	50.0	4550	5000	91.0	70 - 130	
Isopropanol (2-Propanol)	ND	50.0	991	1000	99.1	70 - 130	
Isopropyl Acetate	ND	250.0	1020	1000	102	70 - 130	
Methanol	ND	250.0	912	1000	91.2	70 - 130	
Dichloromethane	ND	50.0	918	1000	91.8	70 - 130	
Pentanes	ND	250.0	2710	3000	90.5	70 - 130	
Propane	ND	250.0	805	1000	80.5	70 - 130	
Tetrahydrofuran	ND	50.0	1000	1000	100	70 - 130	
Toluene	ND	50.0	939	1000	93.9	70 - 130	
Xylenes	ND	50.0	4160	4000	104	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