

# 525 - Astral Breathworks RCO 10.2.20

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

**Sample Type:** Extracts  
**Sample Date:** 10/5/2020  
**Analysis Date:** 10/9/2020  
**Report Date:** 10/12/2020

**Metric Batch ID:**  
 1A4010300016315000027255  
**Metric Sample ID:**  
 1A4010300016315000027276

**Harvest/Process Date:** 10/2/2020  
**Report ID:** LS-201012-4  
**Sample Plan ID:** SP-201005-7-A  
**Sample Procedure:** 160721\_LAB-SOP\_SampleCollection-v008

## Potency

Potency Analysis Date: 10/9/2020  
 Potency Batch ID: CAN\_100920C  
 Potency Method: JAOAC 2015.1

# 78.9%

**Total  
THC**

# <LOQ

**Total  
CBD**



Samples: ZCC-DRF-DWS, TCF-GBG-XGW

Analyte	Description	LOQ	RPD	Min.	Max.	Avg.	Unit: %
<b>Δ9THC</b>	Delta-9 Tetrahydrocannabinol	0.16	1.59	78.3	79.5	<b>78.9</b>	
<b>THCA</b>	Tetrahydrocannabinolic acid	0.16	0.00	<LOQ	<LOQ	<b>&lt;LOQ</b>	
<b>CBD</b>	Cannabidiol	0.16	0.00	ND	<LOQ	<b>&lt;LOQ</b>	
<b>CBDA</b>	Cannabidiolic acid	0.16	0.00	ND	ND	<b>ND</b>	
<b>Δ8THC</b>	Delta-8 Tetrahydrocannabinol*	0.16	0.00	ND	ND	<b>ND</b>	
<b>THCV</b>	Tetrahydrocannabivarin*	0.16	77.3	<LOQ	0.361	0.361	
<b>CBG</b>	Cannabigerol*	0.16	21.1	1.49	1.85	1.67	
<b>CBGA</b>	Cannabigerolic acid*	0.16	0.00	ND	<LOQ	<LOQ	
<b>CBC</b>	Cannabichromene*	0.16	8.30	0.967	1.05	1.01	
<b>CBCA</b>	Cannabichromenic acid*	0.16	0.00	ND	ND	<b>ND</b>	
<b>CBN</b>	Cannabinol	0.16	21.5	<LOQ	0.199	0.199	
<b>Total THC</b>	Δ9THC + (THCA × 0.877)		1.59	78.3	79.5	<b>78.9</b>	
<b>Total CBD</b>	CBD + (CBDA × 0.877)		0.00	ND	<LOQ	<b>&lt;LOQ</b>	
<b>Total</b>			2.27	80.7	83.0	82.1	

## Compliance

<b>Pesticides</b>	Within limits	Analysis Date: 10/9/2020	Pass
<b>Solvents</b>	Within limits	Analysis Date: 10/9/2020	Pass
<b>Potency</b>	Within limits	Analysis Date: 10/9/2020	Pass

Bryce Kidd, Ph.D.  
 Lab Director

Aaron Troyer  
 Chief Science Officer



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**Metric Batch ID:**  
 1A4010300016315000027255  
**Metric Sample ID:**  
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**Harvest/Process Date:** 10/2/2020  
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**Sample Plan ID:** SP-201005-7-A  
**Sample Procedure:** 160721\_LAB-SOP\_SampleCollection-v008



**Terpene Analysis Date:** 10/9/2020  
**Terpene Batch ID:** TRP\_100920A

**Method:** JAOAC 2015.1  
**Unit:** %

Analyte	Avg.	Notes
β-Caryophyllene	1.99%	<div style="width: 1.99%;"></div>
Humulene	0.715%	<div style="width: 0.715%;"></div>
Linalool	0.430%	<div style="width: 0.430%;"></div>
Limonene	0.245%	<div style="width: 0.245%;"></div>
α-Terpineol	0.217%	<div style="width: 0.217%;"></div>
α-Bisabolol	0.181%	<div style="width: 0.181%;"></div>
β-Myrcene	0.100%	<div style="width: 0.100%;"></div>
β-Pinene	0.0354%	<div style="width: 0.0354%;"></div>
Sabinene	0.0309%	<div style="width: 0.0309%;"></div>
Selinadiene	0.0301%	<div style="width: 0.0301%;"></div>
β-Ocimene	0.0189%	<div style="width: 0.0189%;"></div>
α-Pinene	0.0177%	<div style="width: 0.0177%;"></div>
Terpinolene	0.0133%	<div style="width: 0.0133%;"></div>
Eucalyptol	0.0105%	<div style="width: 0.0105%;"></div>
Geraniol	0.00767%	<div style="width: 0.00767%;"></div>
Camphene	0.00676%	<div style="width: 0.00676%;"></div>
Fenchone	0.00639%	<div style="width: 0.00639%;"></div>
α-Terpinene	0.00462%	<div style="width: 0.00462%;"></div>
γ-Terpinene	0.00455%	<div style="width: 0.00455%;"></div>
Δ3-Carene	0.00323%	<div style="width: 0.00323%;"></div>
Azulene	ND	
Borneol	ND	
Camphore	ND	
Caryophyllene Oxide	ND	
Cedrol	ND	
Cymene	ND	
Fenchol	ND	
Geranyl Acetate	ND	
Guaiol	ND	

Analyte	Avg.	Notes
Isoborneol	ND	
Isopulegol	ND	
Nerol	ND	
Pulegone	ND	
Sabinene Hydrate	ND	
Valencene	ND	
cis-Nerolidol	ND	
trans-Nerolidol	ND	
α-Cedrene	ND	
α-Ocimene	ND	
α-Phellandrene	ND	
β-Farnesene 1	ND	
β-Farnesene 2	ND	
γ-Terpineol	ND	
<b>Total</b>	<b>4.07%</b>	

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**Sample Procedure:** 160721\_LAB-SOP\_SampleCollection-v008

## Pesticides Sample Data

Pesticides Analysis Date: 10/9/2020  
 Pesticides Batch ID: PST\_100920A

Method: EN 15662  
 Unit: µg/g (ppm)

Pass 

Analyte	ZCC-DRF-DWS	TCF-GBG-XGW	Limits	LOQ	Notes	Status	Analyte	ZCC-DRF-DWS	TCF-GBG-XGW	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	1.0		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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**Sample Plan ID:** SP-201005-7-A  
**Sample Procedure:** 160721\_LAB-SOP\_SampleCollection-v008

## Pesticides Quality Control Data

Pesticides QC Analysis Date: 10/9/2020  
 Pesticides QC Batch ID: PST\_100920A  
 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	1.02	1.00	102	50 - 150		Metalaxyl	ND	0.1	0.956	1.00	95.6	50 - 150	
Acephate	ND	0.1	0.882	1.00	88.2	50 - 150		Methiocarb	ND	0.1	0.939	1.00	93.9	50 - 150	
Acequinocyl	ND	1.5	1.04	1.00	104	50 - 150		Methomyl	ND	0.1	0.767	1.00	76.7	50 - 150	
Acetamiprid	ND	0.1	0.878	1.00	87.8	50 - 150		Methyl Parathion	ND	0.2	1.71	1.00	171	30 - 150	ME
Aldicarb	ND	0.1	0.876	1.00	87.6	50 - 150		MGK-264	ND	0.2	0.623	0.600	104	50 - 150	
Azoxystrobin	ND	0.1	0.991	1.00	99.1	50 - 150		Myclobutanil	ND	0.1	1.00	1.00	100	50 - 150	
Bifenazate	ND	0.1	1.88	1.00	188	50 - 150	HB	Naled	ND	0.2	0.943	1.00	94.3	50 - 150	
Bifenthrin	ND	0.1	0.958	1.00	95.8	50 - 150		Oxamyl	ND	0.1	0.844	1.00	84.4	50 - 150	
Boscalid	ND	0.1	0.973	1.00	97.3	50 - 150		Paclobutrazol	ND	0.1	0.789	1.00	78.9	50 - 150	
Carbaryl	ND	0.1	0.832	1.00	83.2	50 - 150		Permethrins	ND	0.1	0.683	1.00	68.3	50 - 150	
Carbofuran	ND	0.1	0.823	1.00	82.3	50 - 150		Phosmet	ND	0.1	0.914	1.00	91.4	50 - 150	
Chlorantraniliprole	ND	0.1	0.953	1.00	95.3	50 - 150		Piperonyl Butoxide	ND	1.0	1.09	1.00	109	50 - 150	
Chlorfenapyr	ND	0.1	1.03	1.00	103	50 - 150		Prallethrin	ND	0.1	0.930	1.00	93.0	50 - 150	
Chlorpyrifos	ND	0.1	0.979	1.00	97.9	50 - 150		Propiconazole	ND	0.1	0.974	1.00	97.4	50 - 150	
Clofentezine	ND	0.1	0.913	1.00	91.3	50 - 150		Propoxur	ND	0.1	0.937	1.00	93.7	50 - 150	
Cyfluthrin	ND	0.5	0.981	1.00	98.1	50 - 150		Pyrethrins	ND	0.5	0.649	1.00	64.9	50 - 150	
Cypermethrin	ND	0.1	0.948	1.00	94.8	50 - 150		Pyridaben	ND	0.1	0.928	1.00	92.8	50 - 150	
Daminozide	ND	0.5	0.392	1.00	39.2	10 - 150		Spinosad	ND	0.1	1.03	1.00	103	50 - 150	
Diazinon	ND	0.1	0.970	1.00	97.0	50 - 150		Spiromesifen	ND	0.1	0.932	1.00	93.2	50 - 150	
Dichlorvos (DDVP)	ND	0.5	1.01	1.00	101	50 - 150		Spirotetramat	ND	0.1	1.06	1.00	106	50 - 150	
Dimethoate	ND	0.1	0.934	1.00	93.4	50 - 150		Spiroxamine	ND	0.1	0.999	1.00	99.9	50 - 150	
Ethoprophos	ND	0.1	0.930	1.00	93.0	50 - 150		Tebuconazole	ND	0.1	0.987	1.00	98.7	50 - 150	
Etofenprox	ND	0.1	0.962	1.00	96.2	50 - 150		Thiacloprid	ND	0.1	0.957	1.00	95.7	50 - 150	
Etoxazole	ND	0.1	0.895	1.00	89.5	50 - 150		Thiamethoxam	ND	0.1	0.850	1.00	85.0	50 - 150	
Fenoxycarb	ND	0.1	0.993	1.00	99.3	50 - 150		Trifloxystrobin	ND	0.1	0.918	1.00	91.8	50 - 150	
Fenpyroximate	ND	0.1	1.01	1.00	101	50 - 150									
Fipronil	ND	0.1	0.912	1.00	91.2	50 - 150									
Flonicamid	ND	0.1	0.823	1.00	82.3	50 - 150									
Fludioxonil	ND	0.1	0.933	1.00	93.3	50 - 150									
Hexythiazox	ND	0.1	0.989	1.00	98.9	50 - 150									
Imazalil	ND	0.1	1.18	1.00	118	50 - 150									
Imidacloprid	ND	0.1	0.843	1.00	84.3	50 - 150									
Kresoxim-methyl	ND	0.1	0.916	1.00	91.6	50 - 150									
Malathion	ND	0.1	0.936	1.00	93.6	50 - 150									

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## Residual Solvents Sample Data

Solvents Analysis Date: 10/9/2020  
 Solvents Batch ID: RES\_100920A

Method: EPA 5021A  
 Unit: µg/g (ppm)

Pass 

Analyte	ZCC-DRF-DWS	TCF-GBG-XGW	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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Solvents QC Analysis Date: 10/9/2020  
 Solvents QC Batch ID: RES\_100920A

Method: EPA 5021A  
 Unit: µg/g (ppm)

Analyte	Blank	LOQ	LCS	LCS Spike	LCS Rec (%)	Limits (%)	Notes
1,4-Dioxane	ND	50.0	942	1000	94.2	70 - 130	
2-Butanol	ND	250.0	862	1000	86.2	70 - 130	
2-Ethoxyethanol	ND	50.0	874	1000	87.4	70 - 130	
Acetone	ND	250.0	829	1000	82.9	70 - 130	
Acetonitrile	ND	50.0	848	1000	84.8	70 - 130	
Benzene	ND	2.0	18.3	20.0	91.3	70 - 130	
Butanes	ND	250.0	1470	2000	73.3	70 - 130	
Cumene	ND	50.0	916	1000	91.6	70 - 130	
Cyclohexane	ND	50.0	838	1000	83.8	70 - 130	
Ethyl Acetate	ND	250.0	846	1000	84.6	70 - 130	
Ethyl Ether	ND	250.0	800	1000	80.0	70 - 130	
Ethylene Glycol	ND	250.0	896	1000	89.6	70 - 130	
Ethylene Oxide	ND	50.0	776	1000	77.6	70 - 130	
Heptane	ND	250.0	790	1000	79.0	70 - 130	
Hexanes	ND	50.0	3920	5000	78.5	70 - 130	
Isopropanol (2-Propanol)	ND	50.0	839	1000	83.9	70 - 130	
Isopropyl Acetate	ND	250.0	863	1000	86.3	70 - 130	
Methanol	ND	250.0	816	1000	81.6	70 - 130	
Dichloromethane	ND	50.0	811	1000	81.1	70 - 130	
Pentanes	ND	250.0	2350	3000	78.4	70 - 130	
Propane	ND	250.0	658	1000	<b>65.8</b>	70 - 130	ME
Tetrahydrofuran	ND	50.0	848	1000	84.8	70 - 130	
Toluene	ND	50.0	874	1000	87.4	70 - 130	
Xylenes	ND	50.0	3570	4000	89.1	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