

## Certificate of Analysis

### Cannagaea

2716 S College Ave, Unit D  
Fort Collins Colorado 80525 United States

<b>Sample Name:</b>	<b>Hemp Oil</b>	<b>Eurofins Sample:</b>	<b>8424448</b>
<b>Project ID</b>	CANNAGAEA-20190507-0001	<b>Receipt Date</b>	02-May-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
<b>Sample Serving Size</b>		<b>Login Date</b>	07-May-2019
<b>Description</b>	4-26-2019	<b>Date Started</b>	09-May-2019

Analysis	Specifications	Result
<b>Industrial Hemp Cannabinoid Profile</b>		
CBDVA		<0.00250 %
CBDV		0.0134 %
CBDA		0.0161 %
CBGA		<0.00250 %
CBG		0.117 %
CBD		3.03 %
THCV		0.0331 %
CBN		<0.00250 %
Delta 9-THC		0.122 %
Delta 8-THC		<0.00500 %
THCA		<0.00250 %
CBC		0.184 %
Total Cannabinoids		3.52 %
<b>Terpenes *</b>		
(-)-alpha-Bisabolol		360 ppm
Camphene		<10 ppm
(1S)-(+)-3-Carene		<10 ppm
beta-Caryophyllene		890 ppm
p-Cymene		<10 ppm
Eucalyptol		12 ppm
alpha-Humulene (alpha-Caryophyllene)		240 ppm
(-)-Isopulegol		<10 ppm
(R)-(+)-Limonene		43 ppm
Linalool		26 ppm
beta-Myrcene		120 ppm
(E)-b-Ocimene		<6.0 ppm
(Z)-b-Ocimene		<3.0 ppm
alpha-Pinene		<10 ppm
beta-Pinene		<10 ppm
alpha-Terpinene		<10 ppm

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Analysis	Specifications	Result
<b>Terpenes *</b>		
gamma-Terpinene		<10 ppm
Terpinolene		<10 ppm
<b>Aerobic Plate Count *</b>		
Aerobic Plate Count	<= 10000 CFU/g	210 CFU/g
<b>E. coli *</b>		
Escherichia Coli		Absent /10 g
<b>Enterobacteriaceae (Bile-Tolerant Gram-Negative Bacteria) *</b>		
Enterobacterial Count		<10 MPN/g
<b>Salmonella USP *</b>		
Salmonella		Absent /10 g
<b>Staphylococcus *</b>		
Staphylococcus Aureus		Absent /10 g
<b>Yeast and Mold Count *</b>		
Yeast Count	<= 1000 CFU/g	<10 CFU/g
Mold Count	<= 1000 CFU/g	<10 CFU/g
<b>Preparatory Testing of Nutritional and Dietary Supplements *</b>		
Staphylococcus Suitability Result		Pass**
Aerobic Plate Suitability Result		Pass**
E. coli Suitability Result		Pass**
Yeast and Mold Suitability		Pass**
Bile-Tolerant Gram-Neg Bacteria Suitability Result		Pass**
Salmonella Suitability Result		Pass**
<b>Metals Analysis by ICP-MS</b>		
Arsenic		<0.0624 ppm
Cadmium		<0.0156 ppm
Lead		0.0226 ppm
Mercury		<0.00780 ppm
<b>Multi-Residue Analysis for hemp products - 60+ compounds</b>		
Matrix Type - To Determine Limit of Quantification (LOQ)		High-Fat Food Matrices
Abamectin		<0.05 mg/kg

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Page 2 of 8

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Analysis	Specifications	Result
<b>Multi-Residue Analysis for hemp products - 60+ compounds</b>		
Aldicarb		<0.05 mg/kg
Aldicarb sulfone (Aldoxycarb)		<0.05 mg/kg
Aldicarb sulfoxide		<0.05 mg/kg
Azoxystrobin		<0.05 mg/kg
Bifenazate		<0.05 mg/kg
Bifenthrin		<0.05 mg/kg
Carbaryl		<0.05 mg/kg
Carbofuran		<0.05 mg/kg
Carbofuran-3-hydroxy-		<0.05 mg/kg
Chlorantraniliprole		<0.05 mg/kg
Chlordane, cis-		<0.05 mg/kg
Chlordane, trans-		<0.05 mg/kg
Chlorfenapyr		<0.05 mg/kg
Chlorpyrifos		<0.05 mg/kg
Coumaphos		<0.05 mg/kg
Cyfluthrin		<0.05 mg/kg
Cypermethrin		<0.05 mg/kg
Cyproconazole (2 diastereoisomers)		<0.05 mg/kg
Cyprodinil		<0.05 mg/kg
Dichlorvos		<0.05 mg/kg
Diclobutrazol		<0.05 mg/kg
Dipropetryn		<0.05 mg/kg
Disulfoton		<0.05 mg/kg
Endosulfan I (alpha-isomer)		<0.05 mg/kg
Endosulfan II (beta-isomer)		<0.05 mg/kg
Endosulfan sulfate		<0.05 mg/kg
Epoxiconazole		<0.05 mg/kg
Ethiofencarb		<0.05 mg/kg
Etofenprox		<0.05 mg/kg
Etoxazole		<0.05 mg/kg

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Analysis	Specifications	Result
<b>Multi-Residue Analysis for hemp products - 60+ compounds</b>		
Fenoxycarb		<0.05 mg/kg
Fenprothrin		<0.05 mg/kg
Fenvalerate/Esfenvalerate (sum of isomers)		<0.05 mg/kg
Fipronil		<0.05 mg/kg
Fipronil desulfinyl		<0.05 mg/kg
Fipronil sulfone		<0.05 mg/kg
Imazalil		<0.05 mg/kg
Imidacloprid		<0.05 mg/kg
Malathion		<0.05 mg/kg
Methiocarb		<0.05 mg/kg
Methiocarb sulfone		<0.05 mg/kg
Methiocarb sulfoxide		<0.05 mg/kg
Methomyl		<0.05 mg/kg
Metolachlor		<0.05 mg/kg
Mevinphos (E- and Z-isomers)		<0.05 mg/kg
Myclobutanil		<0.05 mg/kg
Naled (Dibrom)		<0.05 mg/kg
Paclobutrazol		<0.05 mg/kg
Permethrin (sum of isomers)		<0.05 mg/kg
Propoxur		<0.05 mg/kg
Pyrethrum (total)		<0.50 mg/kg
Spinetoram (spinosyns J and L)		<0.05 mg/kg
Spinosad (spinosyns A and D)		<0.05 mg/kg
Spirodiclofen		<0.05 mg/kg
Spiromesifen		<0.05 mg/kg
Spiromesifen enol		<0.05 mg/kg
Spirotetramat		<0.05 mg/kg
Spiroxamine (2 diastereoisomers)		<0.05 mg/kg
Tebuconazole		<0.05 mg/kg
Thiabendazole		<0.05 mg/kg

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Analysis	Specifications	Result
<b>Multi-Residue Analysis for hemp products - 60+ compounds</b>		
Thiabendazole-5-hydroxy-		<0.05 mg/kg
Thiacloprid		<0.05 mg/kg
Trifloxystrobin		<0.05 mg/kg

Method References	Testing Location
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<b>Aerobic Plate Count (USPC2021)</b>	<b>Food Integ. Innovation-Madison NE</b>
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USP Current revision, Chapter 2021.

To satisfy the requirements of the USP, the Preparatory Test must be completed on each matrix.

\*\*Based on the results of the preparatory test, the detection limit stipulated is adequate for the enumeration of the specified microorganisms.

<b>E. coli (USPE2022)</b>	<b>Food Integ. Innovation-Madison NE</b>
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USP Current revision, Chapter 2022.

To satisfy the requirements of the USP, the Preparatory Test must be completed on each matrix.

\*\*Based on the results of the preparatory test, conditions stipulated are adequate for detecting the presence of the specified microorganism.

<b>Enterobacteriaceae (Bile-Tolerant Gram-Negative Bacteria) (USPN2021)</b>	<b>Food Integ. Innovation-Madison NE</b>
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USP Current revision, Chapter 2021.

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<b>Industrial Hemp Cannabinoid Profile (IHCBD_S)</b> Official Methods of Analysis, Method 2018.11, AOAC INTERNATIONAL, (Modified). Lukas Vaclavik, Frantisek Benes, Alex Krmela, Veronika Svobodova, Jana Hajsolva and Katerina Mastovska, "Quantification of Cannabinoids in Cannabis Dried Plant Materials, Concentrates, and Oils Liquid Chromatography-Diode Array Detection Technique with Optional Mass Spectrometric Detection, " First Action Method, Journal of AOAC International, Future Issue	Food Integrity Innovation-Boulder
<b>Metals Analysis by ICP-MS (ICP_MS_B_S)</b> Methods for the Determination of Metals in Environmental Standards - Supplement 1, EPA-600/R-94-111, May 1994. "Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Mass Spectrometry", USEPA Method 200.8, Revision 5.1, EMMC Version.	Food Integrity Innovation-Boulder
<b>Multi-Residue Analysis for hemp products - 60+ compounds (PEST_HEMP)</b> <i>Official Methods of Analysis, AOAC Official Method 2007.01</i> , Pesticide Residues in Foods by Acetonitrile Extraction and Partitioning with Magnesium Sulfate, AOAC INTERNATIONAL (modified).  <i>CEN Standard Method EN 15662</i> : Food of plant origin - Determination of pesticide residues using GC-MS and/or LC-MS/MS following acetonitrile extraction/partitioning and clean-up by dispersive SPE - QuEChERS method. List of the tested pesticides and their limits of quantification (LOQs) are available upon request.	Food Integ. Innovation-Greenfield
<b>Preparatory Testing of Nutritional and Dietary Supplements (USPA_PT)</b>	Food Integ. Innovation-Madison NE
<b>Preparatory Testing of Nutritional and Dietary Supplements (USPC_PT)</b>	Food Integ. Innovation-Madison NE
<b>Preparatory Testing of Nutritional and Dietary Supplements (USPE_PT)</b>	Food Integ. Innovation-Madison NE
<b>Preparatory Testing of Nutritional and Dietary Supplements (USPM_PT)</b>	Food Integ. Innovation-Madison NE
<b>Preparatory Testing of Nutritional and Dietary Supplements (USPN_PT)</b>	Food Integ. Innovation-Madison NE
<b>Preparatory Testing of Nutritional and Dietary Supplements (USPS_PT)</b>	Food Integ. Innovation-Madison NE
<b>Salmonella USP (USPS2022)</b> USP Current revision, Chapter 2022. To satisfy the requirements of the USP, the Preparatory Test must be completed on each matrix. **Based on the results of the preparatory test, conditions stipulated are adequate for detecting the presence of the specified microorganism.	Food Integ. Innovation-Madison NE

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Page 6 of 8

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Method References	Testing Location
<p><b>Staphylococcus (USPA2022)</b></p> <p>USP Current revision, Chapter 2022. To satisfy the requirements of the USP, the Preparatory Test must be completed on each matrix. **Based on the results of the preparatory test, conditions stipulated are adequate for detecting the presence of the specified microorganism.</p>	<p><b>Food Integ. Innovation-Madison NE</b></p>
<p><b>Terpenes (TERPENES_S)</b></p> <p><b>Internally Developed Method</b></p>	<p><b>Food Integrity Innovation-Boulder</b></p>
<p><b>Yeast and Mold Count (USPM2021)</b></p> <p>USP Current revision, Chapter 2021. To satisfy the requirements of the USP, the Preparatory Test must be completed on each matrix. **Based on the results of the preparatory test, the detection limit stipulated is adequate for the enumeration of the specified microorganisms.</p>	<p><b>Food Integ. Innovation-Madison NE</b></p>

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#### Testing Location(s)

Released on Behalf of Eurofins by

##### Food Integrity Innovation-Boulder

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##### Food Integ. Innovation-Greenfield

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##### Food Integ. Innovation-Madison NE

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Richard Higby - Director

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