

# Certificate of Analysis

507 Highland Drive  
 River Falls, WI, 54022  
 Phone: (715) 426-0246  
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 www.eurofinsus.com/biodiagnostics

**Customer Name:** Fresh Hemp Foods (Manitoba Harvest USA LLC)  
**Office:** Winnipeg, MB  
**Street Address:** 69 Eagle Drive  
**City, State, Zip:** Winnipeg, MB, R2R 1V4  
**Phone:**

**Date Reported:** 05/30/2019  
**Date Completed:** 05/29/2019  
**Date Received:** 05/24/2019  
**Testing Method:** HPLC

Sample Information	Cannabinoid Name	ID	Weight %	Conc. mg/g	Conc. mg/mL
<b>Sample No:</b> 119084468	Cannabichromenic Acid	CBCA	ND	ND	
<b>Crop:</b> Hemp, Industrial	Cannabicyclol	CBL	ND	ND	
<b>Variety:</b> BSHE Peppermint Spray	Cannabidiol	CBD	1.051	10.51	
<b>Lot:</b> E19013	Cannabidiolic Acid	CBDA	ND	ND	
<b>Seed Size:</b>	Cannabidivarin	CBDV	ND	ND	
<b>Customer Tracking#:</b>	Cannabidivarinic Acid	CBDVA	ND	ND	
<b>Seeds Per Pound:</b>	Cannabigerol	CBG	ND	ND	
<b>Batch:</b>	Cannabigerolic Acid	CBGA	ND	ND	
<b>LIMS:</b>	Cannabichromene	CBC	0.006	0.06	
<b>IL:</b>	Cannabinol	CBN	ND	ND	
	Cannabinolic Acid	CBNA	ND	ND	
<b>Comments:</b> LOQ= 50ppm or 0.005 wt %	$\Delta^9$ -Tetrahydrocannabinol	$\Delta^9$ -THC	ND	ND	
	$\Delta^8$ -Tetrahydrocannabinol	$\Delta^8$ -THC	ND	ND	
	Tetrahydrocannabinolic Acid A	THCA-A	ND	ND	
	Tetrahydrocannabivarin	THCV	ND	ND	
	Tetrahydrocannabivarinic Acid	THCVA	ND	ND	
	Total Cannabinoids		1.057	10.57	
	Total THC*		ND	ND	



\*Total THC is calculated as the sum of  $\Delta^9$ -THC +  $\Delta^8$ -THC + (THCA-A \* 0.877) + THCV + (THCV-A \* 0.877).

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Joseph Zalusky

Approved Chemist, Gas Chromatography  
 American Oil Chemists' Society (AOCS)



## Certificate of Analysis

Eurofins BioDiagnostics, Inc.

<b>Sample Name:</b>	<b>BSHE Peppermint Spray E19013 119084468</b>	<b>Eurofins Sample:</b>	<b>8502839</b>
<b>Project ID</b>	EUROFINS-20190529-0566	<b>Receipt Date</b>	29-May-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
<b>Sample Serving Size</b>		<b>Login Date</b>	29-May-2019
		<b>Date Started</b>	29-May-2019
		<b>Number Composited</b>	2
		<b>Online Order</b>	20

Analysis	Result
<b>Terpenes</b>	
(-)-alpha-Bisabolol	13 mg/100g
Camphene	<1.0 mg/100g
(1S)-(+)-3-Carene	<1.0 mg/100g
beta-Caryophyllene	64 mg/100g
p-Cymene	2.9 mg/100g
Eucalyptol	86 mg/100g
alpha-Humulene (alpha-Caryophyllene)	3.9 mg/100g
(-)-Isopulegol	<1.0 mg/100g
(R)-(+)-Limonene	43 mg/100g
Linalool	3.4 mg/100g
beta-Myrcene	5.8 mg/100g
(E)-b-Ocimene	0.90 mg/100g
(Z)-b-Ocimene	2.7 mg/100g
alpha-Pinene	13 mg/100g
beta-Pinene	17 mg/100g
alpha-Terpinene	6.2 mg/100g
gamma-Terpinene	8.5 mg/100g
Terpinolene	3.0 mg/100g

Method References	Testing Location
Terpenes (TERPENES_S) Internally Developed Method	Food Integrity Innovation-Madison

Testing Location(s)	Released on Behalf of Eurofins by
Food Integrity Innovation-Madison	Edward Ladwig - Director

Eurofins Food Chemistry Testing US, Inc.  
3301 Kinsman Blvd  
Madison WI 53704  
800-675-8375

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QC Dept.  
BioDiagnostics, Inc.  
507 Highland Drive  
River Falls, WI 54022

Client Code: QR0000282  
PO Number: Hemp INTERCO

## ANALYTICAL REPORT

Received On: 05/29/2019  
Reported On: 06/04/2019

AR-19-QR-TEMP0068-01  
EUUSGA2-00029219

<b>Eurofins Sample Code: 111-2019-05290038</b>	<b>Sample Registration Date: 5/29/19</b>
<b>Client Sample Code: 119084466</b>	<b>Condition Upon Receipt: Acceptable</b>
<b>Sample Description: BSHE Peppermint Spray, E19014</b>	<b>Sample Reference:</b>

<b>Aerobic Plate Count</b>	<b>Reference</b>	<b>Accreditation</b>	<b>Analysis Completed</b>	<b>Sub.</b>
	AOAC 966.23	A2LA 3329.05	5/31/2019	

<b>Parameter</b>	<b>Result</b>
Aerobic Plate Count	< 10 cfu / g

<b>Coliforms-Escherichia coli</b>	<b>Reference</b>	<b>Accreditation</b>	<b>Analysis Completed</b>	<b>Sub.</b>
	AOAC 991.14	A2LA 3329.05	5/31/2019	

<b>Parameter</b>	<b>Result</b>
Coliforms	< 10 cfu / g
Escherichia coli	< 10 cfu / g

<b>Listeria species</b>	<b>Reference</b>	<b>Accreditation</b>	<b>Analysis Completed</b>	<b>Sub.</b>
	AOAC 2004.06		5/31/2019	

<b>Parameter</b>	<b>Result</b>
Listeria species	Not Detected / 25 g

<b>Yeast-Mold</b>	<b>Reference</b>	<b>Accreditation</b>	<b>Analysis Completed</b>	<b>Sub.</b>
	FDA BAM Chapter 18	A2LA 3329.05	6/3/2019	

<b>Parameter</b>	<b>Result</b>
Yeast	< 10 cfu / g
Mold	< 10 cfu / g

<b>Salmonella species</b>	<b>Reference</b>	<b>Accreditation</b>	<b>Analysis Completed</b>	<b>Sub.</b>
	AOAC 2004.03		5/31/2019	

<b>Parameter</b>	<b>Result</b>
Salmonella species	Not Detected / 25 g

## ANALYTICAL REPORT

Received On: 05/29/2019  
 Reported On: 06/04/2019

AR-19-QR-TEMP0068-01  
 EUUSGA2-00029219

<b>Eurofins Sample Code: 111-2019-05290039</b>	<b>Sample Registration Date: 5/29/19</b>
<b>Client Sample Code: 119084467</b>	<b>Condition Upon Receipt: Acceptable</b>
<b>Sample Description: BSHE Peppermint Spray, E19014-1</b>	<b>Sample Reference:</b>

Aerobic Plate Count	Reference	Accreditation	Analysis Completed	Sub.
	AOAC 966.23	A2LA 3329.05	5/31/2019	

Parameter	Result
Aerobic Plate Count	< 10 cfu / g

Coliforms-Escherichia coli	Reference	Accreditation	Analysis Completed	Sub.
	AOAC 991.14	A2LA 3329.05	5/31/2019	

Parameter	Result
Coliforms	< 10 cfu / g
Escherichia coli	< 10 cfu / g

Listeria species	Reference	Accreditation	Analysis Completed	Sub.
	AOAC 2004.06		5/31/2019	

Parameter	Result
Listeria species	Not Detected / 25 g

Yeast-Mold	Reference	Accreditation	Analysis Completed	Sub.
	FDA BAM Chapter 18	A2LA 3329.05	6/3/2019	

Parameter	Result
Yeast	< 10 cfu / g
Mold	< 10 cfu / g

Salmonella species	Reference	Accreditation	Analysis Completed	Sub.
	AOAC 2004.03		5/31/2019	

Parameter	Result
Salmonella species	Not Detected / 25 g

<b>Eurofins Sample Code: 111-2019-05290040</b>	<b>Sample Registration Date: 5/29/19</b>
<b>Client Sample Code: 119084468</b>	<b>Condition Upon Receipt: Acceptable</b>
<b>Sample Description: BSHE Peppermint Spray, E19013</b>	<b>Sample Reference:</b>

Aerobic Plate Count	Reference	Accreditation	Analysis Completed	Sub.
	AOAC 966.23	A2LA 3329.05	5/31/2019	

Parameter	Result
Aerobic Plate Count	< 10 cfu / g

Coliforms-Escherichia coli	Reference	Accreditation	Analysis Completed	Sub.
	AOAC 991.14	A2LA 3329.05	5/31/2019	

Parameter	Result
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## ANALYTICAL REPORT

Received On: 05/29/2019  
 Reported On: 06/04/2019

AR-19-QR-TEMP0068-01  
 EUUSGA2-00029219

Coliforms < 10 cfu / g  
 Escherichia coli < 10 cfu / g

Listeria species	Reference	Accreditation	Analysis Completed	Sub.
	AOAC 2004.06		5/31/2019	

**Parameter**                      **Result**  
 Listeria species                Not Detected / 25 g

Yeast-Mold	Reference	Accreditation	Analysis Completed	Sub.
	FDA BAM Chapter 18	A2LA 3329.05	6/3/2019	

**Parameter**                      **Result**  
 Yeast                              < 10 cfu / g  
 Mold                                < 10 cfu / g

Salmonella species	Reference	Accreditation	Analysis Completed	Sub.
	AOAC 2004.03		5/31/2019	

**Parameter**                      **Result**  
 Salmonella species            Not Detected / 25 g

Respectfully Submitted,



Viridiana Castro  
 Microbiology Supervisor



Results shown in this report relate solely to the item submitted for analysis. | Any opinions/interpretations expressed on this report are given independent of the laboratory's scope of accreditation. | All results are reported on an "As Received" basis unless otherwise stated. | Reports shall not be reproduced except in full without written permission of Eurofins Scientific, Inc. | All work done in accordance with Eurofins General Terms and Conditions of Sale: [www.eurofinsus.com/terms\\_and\\_conditions.pdf](http://www.eurofinsus.com/terms_and_conditions.pdf) | √ Indicates a subcontract test to a different lab. Lab(s) are listed at end of the report. For further details about the performing labs please contact your customer service contact at Eurofins. Measurement of uncertainty can be obtained upon request.

## Certificate of Analysis

Eurofins BioDiagnostics, Inc.

<b>Sample Name:</b>	<b>BSHE Peppermint Spray E19013 119084468</b>	<b>Eurofins Sample:</b>	<b>8502839</b>
<b>Project ID</b>	EUROFINS-20190529-0566	<b>Receipt Date</b>	29-May-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
<b>Sample Serving Size</b>		<b>Login Date</b>	29-May-2019
		<b>Date Started</b>	29-May-2019
		<b>Number Composited</b>	2
		<b>Online Order</b>	20

Analysis	LOQ	Limit	Result	Pass/Fail
<b>Residual Solvents - Class 2 Mix C, Class 3 DMSO (Nonvolatile Solvents)</b>				
2-Methoxyethanol	50 ppm	50 ppm	<50.0 ppm	Pass
2-Ethoxyethanol	160 ppm	160 ppm	<160 ppm	Pass
N,N-Dimethylformamide	880 ppm	880 ppm	<880 ppm	Pass
N,N-Dimethylacetamide	1090 ppm	1090 ppm	<1090 ppm	Pass
Dimethyl Sulfoxide	250 ppm	250 ppm	<250 ppm	Pass
Ethylene Glycol	620 ppm	620 ppm	<620 ppm	Pass
N-Methylpyrrolidone	530 ppm	530 ppm	<530 ppm	Pass
Formamide	220 ppm	220 ppm	<220 ppm	Pass
Sulfolane	160 ppm	160 ppm	<160 ppm	Pass
<b>Residual Solvents - Class 3, Acids Only</b>				
Acetic Acid	200 ppm		<200 ppm	
Formic Acid	200 ppm		<200 ppm	

Method References	Testing Location
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<b>Residual Solvents - Class 2 Mix C, Class 3 DMSO (Nonvolatile Solvents) (USPR_DI_S)</b>	<b>Food Integrity Innovation-Madison</b>
United States Pharmacopeia, 39th Rev. - National Formulary 34th Ed., Method <467>, USP Convention, Inc., Rockville, MD (2016). (Modified).	

<b>Residual Solvents - Class 3, Acids Only (USPR_ACD_S)</b>	<b>Food Integrity Innovation-Madison</b>
[1] United States Pharmacopeia, 39th Rev. - National Formulary 34th Ed., Method <467>, USP Convention, Inc., Rockville, MD (2015). (Modified)	
[2] Zhou, D., Hou, Q., Liu, W., Ren, X., "Rapid determination of formic and acetic acids in biomass hydrolysate by headspace gas chromatography," Journal of Industrial and Engineering Chemistry, 47:281-287 (2017).	

## Certificate of Analysis

Eurofins BioDiagnostics, Inc.

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**Testing Location(s)****Released on Behalf of Eurofins by****Food Integrity Innovation-Madison****Edward Ladwig - Director**

Eurofins Food Chemistry Testing US, Inc.  
3301 Kinsman Blvd  
Madison WI 53704  
800-675-8375

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<b>Sample Name:</b>	<b>BSHE Peppermint Spray E19013 119084468</b>	<b>Eurofins Sample:</b>	<b>8502839</b>
<b>Project ID</b>	EUROFINS-20190529-0566	<b>Receipt Date</b>	29-May-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
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### Analysis

### Result

#### Multi-Residue Analysis for hemp products - 60+ compounds

Matrix Type - To Determine Limit of Quantification (LOQ)

Spices - Botanicals - and other

Specialty Samples

Abamectin	<0.05 mg/kg
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	non-analyzable
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

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Eurofins BioDiagnostics, Inc.

<b>Sample Name:</b>	<b>BSHE Peppermint Spray E19013 119084468</b>	<b>Eurofins Sample:</b>	<b>8502839</b>
<b>Project ID</b>	EUROFINS-20190529-0566	<b>Receipt Date</b>	29-May-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
<b>Sample Serving Size</b>		<b>Login Date</b>	29-May-2019
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### Analysis

### Result

#### Multi-Residue Analysis for hemp products - 60+ compounds

Etoazole	<0.05 mg/kg
Fenoxycarb	<0.05 mg/kg
Fenpropathrin	<0.05 mg/kg
Fenvalerate/Esfenvalerate (sum of isomers)	non-analyzable
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
Thiabendazole-5-hydroxy-	<0.05 mg/kg

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<b>Project ID</b>	EUROFINS-20190529-0566	<b>Receipt Date</b>	29-May-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
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### Analysis

### Result

#### Multi-Residue Analysis for hemp products - 60+ compounds

Thiacloprid	<0.05 mg/kg
Trifloxystrobin	<0.05 mg/kg

### Method References

### Testing Location

#### Multi-Residue Analysis for hemp products - 60+ compounds (PEST\_HEMP)

Food Integ. Innovation-Greenfield

*Official Methods of Analysis, AOAC Official Method 2007.01*, Pesticide Residues in Foods by Acetonitrile Extraction and Partitioning with Magnesium Sulfate, AOAC INTERNATIONAL (modified).

*CEN Standard Method EN 15662*: 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.

### Testing Location(s)

### Released on Behalf of Eurofins by

#### Food Integ. Innovation-Greenfield

Karelyn Koehn - Manager

Eurofins Food Chemistry Testing US, Inc.  
671 S. Meridian Road  
Greenfield IN 46140  
800-675-8375



2918.06

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## Certificate of Analysis

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<b>Sample Name:</b>	<b>BSHE Peppermint Spray E19013 119084468</b>	<b>Eurofins Sample:</b>	<b>8502839</b>
<b>Project ID</b>	EUROFINS-20190529-0566	<b>Receipt Date</b>	29-May-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
<b>Sample Serving Size</b>		<b>Login Date</b>	29-May-2019
		<b>Date Started</b>	29-May-2019
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		<b>Online Order</b>	20

### Analysis

### Result

#### Elements by ICP Mass Spectrometry

Arsenic	<10.0 ppb
Cadmium	<5.00 ppb
Lead	<5.00 ppb
Mercury	<5.00 ppb

### Method References

### Testing Location

#### Elements by ICP Mass Spectrometry (ICP\_MS\_S)

Food Integrity Innovation-Madison

Official Methods of Analysis, Method 2011.19 and 993.14, AOAC INTERNATIONAL, (Modified).  
Pequette, L.H., Szabo, A., Thompson, J.J., "Simultaneous Determination of Chromium, Selenium, and Molybdenum in Nutritional Products by Inductively Coupled Plasma/Mass Spectrometry: Single-Laboratory Validation," Journal of AOAC International, 94(4): 1240 - 1252 (2011).

### Testing Location(s)

### Released on Behalf of Eurofins by

#### Food Integrity Innovation-Madison

Edward Ladwig - Director

Eurofins Food Chemistry Testing US, Inc.  
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Madison WI 53704  
800-675-8375



2918.01

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**REPORT OF ANALYSIS**

**Customer:** Eurofins BioDiagnostics  
507 Highland Drive  
River Falls WI 54022  
Attn: Darcey Rodewald

**Date Received:** 05/29/19  
**Report Date:** 05/31/19

**\*Description:** 119084468  
**Lab Number:** CI01197  
**Commodity:** BSHE PEPP SPRAY E19013

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Analysis	Result	Unit	MDL	Analyzed	Reference
Gluten (ELISA) - Wheat Rye & Barley	<3.0	ppm	3.0	05/31/19	R7001

\*The results shown in this report relate solely to the item submitted for analysis.

**ISO/IEC 17025**



Testing Cert. 1940.01

Eurofins GeneScan



**Dr. Frank Spiegelhalter**  
Executive Vice President