

04311 Silk

<b>Batch ID:</b>	N/A	<b>Test ID:</b>	1182478.038
<b>Reported:</b>	27-Jul-2019	<b>Method:</b>	Concentrate - Test Methods: TM05, TM06
<b>Type:</b>	Concentrate		
<b>Test:</b>	Microbial Contaminants		

## MICROBIAL CONTAMINANTS

Contaminant	Result (CFU/g)*
<b>Total Aerobic Count**</b>	None Detected
<b>Total Coliforms**</b>	None Detected
<b>Total Yeast and Molds**</b>	None Detected
<b><i>E. coli</i></b>	None Detected
<b><i>Salmonella</i></b>	None Detected

\* CFU/g = Colony Forming Unit per Gram

\*\* Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form.

Examples:  $10^2 = 100$  CFU  
 $10^3 = 1,000$  CFU  
 $10^4 = 10,000$  CFU  
 $10^5 = 100,000$  CFU


### NOTES:

Free from visual mold, mildew, and foreign matter

TYM: None Detected

Total Aerobic: None Detected

## FINAL APPROVAL



Robert Belfon  
27-Jul-2019  
5:49 PM



Mike Branvold  
27-Jul-2019  
10:45 PM

PREPARED BY / DATE

APPROVED BY / DATE

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## Certificate of Analysis

### Bluebird Botanicals

500 S Arthur Ave, Ste 300  
Boulder Colorado 80027 United States

<b>Sample Name:</b>	<b>04311 Silk</b>	<b>Eurofins Sample:</b>	<b>8666786</b>
<b>Project ID</b>	BLUEBIR_BO-20190724-0129	<b>Receipt Date</b>	24-Jul-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
<b>Sample Serving Size</b>		<b>Login Date</b>	24-Jul-2019
		<b>Date Started</b>	24-Jul-2019
		<b>Number Composited</b>	2
		<b>Online Order</b>	12704-11F881F7

#### Analysis

#### Result

##### Elements by ICP Mass Spectrometry

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

##### Mycotoxins in Raw Materials

Aflatoxin B1	<0.500 ppb
Aflatoxin B2	<0.500 ppb
Aflatoxin G1	<0.500 ppb
Aflatoxin G2	<0.500 ppb
Aflatoxin M1	<0.500 ppb
Aflatoxin M2	<0.500 ppb
Deoxynivalenol	<100 ppb
T-2 Toxin	<10.0 ppb
HT-2 Toxin	<100 ppb
Fumonisin B1	<25.0 ppb
Fumonisin B2	<25.0 ppb
Ochratoxin A	<1.00 ppb
Zearalenone	<30.0 ppb

##### Multi-Residue Analysis for hemp products - 18 compounds

Matrix Type - To Determine Limit of Quantification (LOQ)

Spices - Botanicals - and other

	Specialty Samples non-analyzable
Abamectin	<50 ppb
Azoxystrobin	<0.05 mg/kg
Bifenazate	<0.05 mg/kg
Bifenthrin	<0.05 mg/kg
Cyfluthrin	<0.05 mg/kg
Dichlorvos	<0.05 mg/kg
Etoxazole	<0.05 mg/kg
Fenoxycarb	<0.05 mg/kg
Imazalil	<0.05 mg/kg
Imidacloprid	<0.05 mg/kg
Myclobutanil	<0.05 mg/kg
Paclobutrazol	<0.05 mg/kg

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<b>Sample Name:</b>	<b>04311 Silk</b>	<b>Eurofins Sample:</b>	<b>8666786</b>
<b>Project ID</b>	BLUEBIR_BO-20190724-0129	<b>Receipt Date</b>	24-Jul-2019
<b>PO Number</b>	CVD	<b>Receipt Condition</b>	Ambient temperature
<b>Sample Serving Size</b>		<b>Login Date</b>	24-Jul-2019
		<b>Date Started</b>	24-Jul-2019
		<b>Number Composited</b>	2
		<b>Online Order</b>	12704-11F881F7

Analysis	Result
<b>Multi-Residue Analysis for hemp products - 18 compounds</b>	
Piperonyl butoxide	<0.05 mg/kg
Pyrethrum (total)	<0.50 mg/kg
Spinosad (spinosyns A and D)	<0.05 mg/kg
Spiromesifen	<0.05 mg/kg
Spirotetramat	<0.05 mg/kg
Trifloxystrobin	<0.05 mg/kg

Method References	Testing Location
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<b>Elements by ICP Mass Spectrometry (ICP_MS_S)</b>	<b>Food Integrity Innovation-Madison</b>
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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).

<b>Multi-Residue Analysis for hemp products - 18 compounds (PEST_HEMP)</b>	<b>Food Integ. Innovation-Greenfield</b>
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*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.

<b>Mycotoxins in Raw Materials (MYCO_REG_S)</b>	<b>Food Integrity Innovation-Madison</b>
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Varga, E., Glauner, T., Koppen, R., Mayer, K., Sulyok, M., Schumacher, R., Krska, R. and Berthiller, F., "Stable isotope dilution assay for the accurate determination of mycotoxins in maize by UHPLC-MS/MS," Analytical and BioAnalytical Chemistry, 402:2675-2686 (2012).

## Certificate of Analysis

### Bluebird Botanicals

500 S Arthur Ave, Ste 300  
Boulder Colorado 80027 United States

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**Testing Location(s)****Released on Behalf of Eurofins by****Food Integ. Innovation-Greenfield**

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

**Karelyn Koehn - Manager**

2918.06

**Food Integrity Innovation-Madison**

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

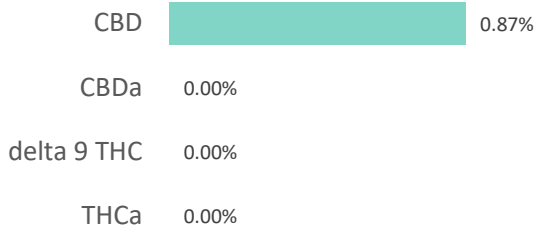
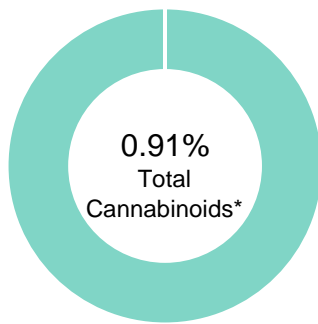
**Edward Ladwig - Director**

2918.01

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**04311 Silk**

<b>Batch ID:</b>	N/A	<b>Test ID:</b>	7503187.003
<b>Reported:</b>	23-Jul-2019	<b>Method:</b>	TM14
<b>Type:</b>	Concentrate		
<b>Test:</b>	Potency		

**CANNABINOID PROFILE**


Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.02	0.00	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.01	0.00	0.0
Cannabidiolic acid (CBDA)	0.03	0.00	0.0
Cannabidiol (CBD)	0.02	0.87	8.7
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.01	0.00	0.0
Cannabinolic Acid (CBNA)	0.03	0.00	0.0
Cannabinol (CBN)	0.01	0.00	0.0
Cannabigerolic acid (CBGA)	0.02	0.00	0.0
Cannabigerol (CBG)	0.01	0.00	0.0
Tetrahydrocannabivarinic Acid (THCVA)	0.02	0.00	0.0
Tetrahydrocannabivarin (THCV)	0.01	0.00	0.0
Cannabidivarinic Acid (CBDVA)	0.03	0.00	0.0
Cannabidivarin (CBDV)	0.02	0.00	0.0
Cannabichromenic Acid (CBCA)	0.01	0.00	0.0
Cannabichromene (CBC)	0.02	0.04	0.4
<b>Total Cannabinoids</b>		<b>0.91</b>	<b>9.10</b>
Total Potential THC**		0.00	0.00
Total Potential CBD**		0.87	8.70

**NOTES:**

N/A

% = % (w/w) = Percent (Weight of Analyte / Weight of Product)

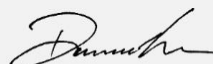
\* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.

\*\* Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.

$$\text{Total THC} = \text{THC} + (\text{THCa} * (0.877)) \text{ and Total CBD} = \text{CBD} + (\text{CBDa} * (0.877))$$
**FINAL APPROVAL**


Daniel Weidensaul  
23-Jul-2019  
4:56 PM

PREPARED BY / DATE



David Green  
23-Jul-2019  
5:10 PM

APPROVED BY / DATE

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# CERTIFICATE OF ANALYSIS



**Customer:** Bluebird Botanicals

<b>Collection Date:</b> 08/01/2019 <b>Order Date:</b> 08/01/2019 <b>Report Date:</b> 08/05/2019 <b>Order #</b> 703084 <b>Batch #</b> 04311 SILK	<b>Net Serving Size:</b> 95778.00/mg <b>Specimen Weight:</b> 12.10/mg <b>Specimen Type:</b> Extract <b>Extracted From:</b> Hemp <b>Description:</b> Hemp Lotion <b>Net Weight:</b> 4418(mg)
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Residual Solvents				(GC/GCMS)	
Analyte	ppm	Analyte	ppm	Analyte	ppm
Acetone	ND	Benzene	ND	Chloroform	ND
Ethanol	ND	I-Butane	ND	Isopropanol	ND
Methanol	ND	N-Butane	ND	Pentane	ND
Toluene	ND				

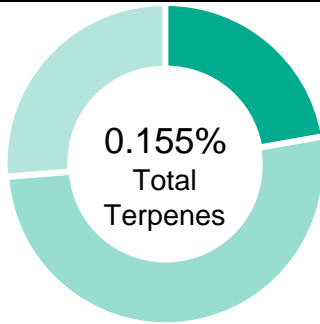
Thomas Farrell, MD  
Lab Director

\* Total CBD = CBD + (CBD-A \* 0.877). Total THC = THCA-A \* 0.877 + Delta 9 THC. T-Caryophyllene = Trans-Caryophyllene, ND = Not Detected, QNS = Quantity Not Sufficient. (%) = Percent, (ppm) = Parts per Million, (cfu) = Colony Forming Unit, (ppb) = Parts per Billion, (µg/Kg) = Microgram per Kilogram, (mg/g) = Milligram per Gram.  
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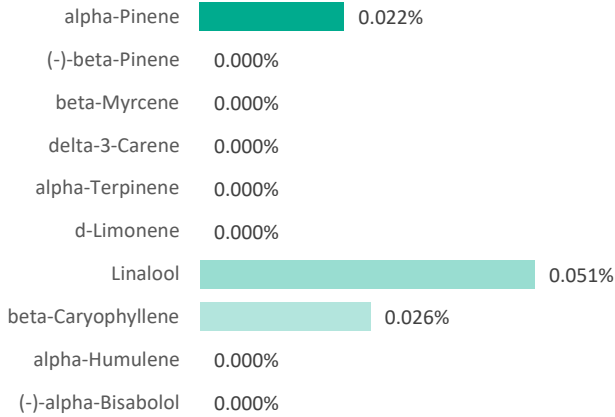
721 Cortaro Drive Sun City Center, FL - 33573	P: +1 (866) 762-8379 F: +1 (813) 634-4538	E: <a href="mailto:info@acslabcannabis.com">info@acslabcannabis.com</a> <a href="http://www.acslabcannabis.com">http://www.acslabcannabis.com</a>	License No. 800025015 CLIA No. 10D1094068
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**04311 Silk**

<b>Batch ID:</b>	N/A	<b>Test ID:</b>	3625013.002
<b>Reported:</b>	26-Jul-2019	<b>Method:</b>	TM10
<b>Type:</b>	Concentrate		
<b>Test:</b>	Terpenes		


**TERPENE PROFILE**


Compound	%(w/w)	mg/g
(-)-alpha-Bisabolol	0.000	0
Camphene	0.000	0
delta-3-Carene	0.000	0
beta-Caryophyllene	0.026	0.26
(-)-Caryophyllene Oxide	0.000	0
p-Cymene	0.000	0
Eucalyptol	0.022	0.22
Geraniol	0.021	0.21
alpha-Humulene	0.000	0
(-)-Isopulegol	0.000	0
d-Limonene	0.000	0
Linalool	0.051	0.51
beta-Myrcene	0.000	0
cis-Nerolidol	0.000	0
trans-Nerolidol	0.000	0
Ocimene	0.009	0.09
beta-Ocimene	0.004	0.04
alpha-Pinene	0.022	0.22
(-)-beta-Pinene	0.000	0
alpha-Terpinene	0.000	0
gamma-Terpinene	0.000	0
Terpinolene	0.000	0
	<b>0.155%</b>	<b>1.55</b>

**PREDOMINANT TERPENES**


NOTES:

**FINAL APPROVAL**

 Greg Zimpfer 26-Jul-2019 3:26 PM	 David Green 26-Jul-2019 4:19 PM
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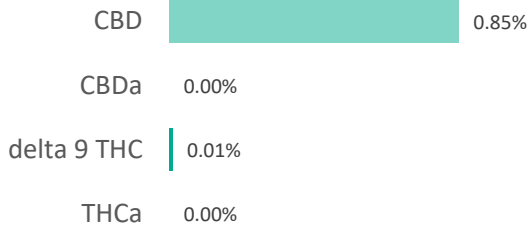
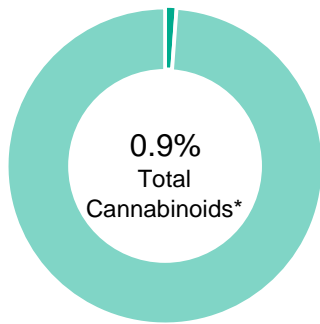
PREPARED BY / DATE

APPROVED BY / DATE

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**04311 SILK-2**

<b>Batch ID:</b>	N/A	<b>Test ID:</b>	7529829.002
<b>Reported:</b>	2-Aug-2019	<b>Method:</b>	TM14
<b>Type:</b>	Concentrate		
<b>Test:</b>	Potency		

**CANNABINOID PROFILE**


Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.02	0.00	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.01	0.01	0.1
Cannabidiolic acid (CBDA)	0.02	0.00	0.0
Cannabidiol (CBD)	0.01	0.85	8.5
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.01	0.00	0.0
Cannabinolic Acid (CBNA)	0.03	0.00	0.0
Cannabinol (CBN)	0.01	0.00	0.0
Cannabigerolic acid (CBGA)	0.02	0.00	0.0
Cannabigerol (CBG)	0.01	0.00	0.0
Tetrahydrocannabivarinic Acid (THCVA)	0.02	0.00	0.0
Tetrahydrocannabivarin (THCV)	0.01	0.00	0.0
Cannabidivarinic Acid (CBDVA)	0.02	0.00	0.0
Cannabidivarin (CBDV)	0.01	0.00	0.0
Cannabichromenic Acid (CBCA)	0.01	0.00	0.0
Cannabichromene (CBC)	0.02	0.04	0.4
<b>Total Cannabinoids</b>		<b>0.90</b>	<b>9.00</b>
Total Potential THC**		0.01	0.10
Total Potential CBD**		0.85	8.50


**NOTES:**

N/A

% = % (w/w) = Percent (Weight of Analyte / Weight of Product)


\* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.

\*\* Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.

$$\text{Total THC} = \text{THC} + (\text{THCa} * (0.877)) \text{ and Total CBD} = \text{CBD} + (\text{CBDa} * (0.877))$$
**FINAL APPROVAL**


**Karen Winternheimer**  
 2-Aug-2019  
 3:10 PM

PREPARED BY / DATE



**David Green**  
 2-Aug-2019  
 3:28 PM

APPROVED BY / DATE

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