



HOP CERTIFICATE OF ANALYSIS

Customer : Wisconsin Hop Exchange Growers Cooperative

Sample ID: 20GAL1087-01LH



Variety: Galena

Certifying Officer: Zach Lilla - Lab Manager

Date : 1/25/2021

TTB Certified Chemist - Member AOAC - ASBC - BJCP

Method			
Hops-4C	Moisture Analysis	% Moisture	9.8
		% Dry Matter	90.2
Hops-6A	Alpha and Beta Acids by SPEC	% Alpha Acids	NT
		% Beta Acids	NT
		a/b ratio	NT
Hops-12	Hop Storage Index	HSI	0.285
Hops-13	Essential Oil by Steam Distillation	mL/100g	2.10
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	38.4 (% of Total AA)
ICE-3		% Alpha Acids	11.47
		Colupulone	62.8 (% of Total BA)
		% Beta Acids	8.16
		a/b ratio	1.41
Hops-17	Hop Essential Oil by GC-FID (as is)		
		% area	mg/100g
		B-Pinene	NT NT
		Myrcene	NT NT
		Linalool	NT NT
		Caryophyllene	NT NT
		Farnesene	NT NT
		Humulene	NT NT
		Geraniol	NT NT

NT=NOT TESTED

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist





HOP QUALITY REPORT

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% Moisture	<input type="text" value="9.8"/>	Typical Range 8 - 12%	<input type="text" value="✓"/>
Total Oil ml/100g @ 10%	<input type="text" value="2.10"/>	1.3 - 2.1 mL	<input type="text" value="✓"/>
cohumulone	<input type="text" value="38.4"/>	34 - 39%	<input type="text" value="✓"/>
Alpha Acids @ 10%	<input type="text" value="11.45"/>	13 - 15%	<input type="text" value="↓"/>
Beta Acids @ 10%	<input type="text" value="8.14"/>	7.5 - 8.5%	<input type="text" value="✓"/>
AROMA QUALITY (AQ)			
	% Area		
B-Pinene	<input type="text" value="NT"/>	0.40 - 0.70 %	<input type="text" value="NT"/>
Myrcene	<input type="text" value="NT"/>	40.00 - 50.00 %	<input type="text" value="NT"/>
Linalool	<input type="text" value="NT"/>	0.10 - 0.40 %	<input type="text" value="NT"/>
Caryophyllene	<input type="text" value="NT"/>	5.00 - 9.00 %	<input type="text" value="NT"/>
Farnesene	<input type="text" value="NT"/>	0.01 - 1.00 %	<input type="text" value="NT"/>
Humulene	<input type="text" value="NT"/>	11.00 - 17.00 %	<input type="text" value="NT"/>
Geraniol	<input type="text" value="NT"/>	0.40 - 0.90 %	<input type="text" value="NT"/>
	mg/mL		
B-Pinene	<input type="text" value="NT"/>	4 - 7	<input type="text" value="NT"/>
Myrcene	<input type="text" value="NT"/>	400 - 500	<input type="text" value="NT"/>
Linalool	<input type="text" value="NT"/>	1 - 4	<input type="text" value="NT"/>
Caryophyllene	<input type="text" value="NT"/>	50 - 90	<input type="text" value="NT"/>
Farnesene	<input type="text" value="NT"/>	0.1 - 10	<input type="text" value="NT"/>
Humulene	<input type="text" value="NT"/>	110 - 170	<input type="text" value="NT"/>
Geraniol	<input type="text" value="NT"/>	4 - 9	<input type="text" value="NT"/>
	mg/100g @ 10% Moisture		
B-Pinene	<input type="text" value="NT"/>	5.2 - 14.7	<input type="text" value="NT"/>
Myrcene	<input type="text" value="NT"/>	520 - 1050	<input type="text" value="NT"/>
Linalool	<input type="text" value="NT"/>	1.3 - 8.4	<input type="text" value="NT"/>
Caryophyllene	<input type="text" value="NT"/>	65 - 189	<input type="text" value="NT"/>
Farnesene	<input type="text" value="NT"/>	0.13 - 21	<input type="text" value="NT"/>
Humulene	<input type="text" value="NT"/>	143 - 357	<input type="text" value="NT"/>
Geraniol	<input type="text" value="NT"/>	5.2 - 18.9	<input type="text" value="NT"/>

Signed: 
 Zachary Lilla - Lab Manager - TTB Certified Chemist

