



HOP CERTIFICATE OF ANALYSIS

Customer : Wisconsin Hop Exchange

Sample ID: 21VOJ1100-01LH



Variety: Vojvodina

Certifying Officer: Zach Lilla - Lab Manager

Date : 12/8/2021

TTB Certified Chemist - Member AOAC - ASBC - BJCP

Method			
Hops-4C	Moisture Analysis	% Moisture	10.8
		% Dry Matter	89.2
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.270
Hops-13	Essential Oil by Steam Distillation	mL/100g	0.78
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	25.6 (% of Total AA)
ICE-3		% Alpha Acids	4.84
		Colupulone	40.1 (% of Total BA)
		% Beta Acids	4.35
		a/b ratio	1.11
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

Customer : Wisconsin Hop Exchange

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% Moisture	<input type="text" value="10.8"/>	Typical Range 8 - 12%	<input type="text" value="✓"/>
Total Oil ml/100g @ 10%	<input type="text" value="0.79"/>	0.6 - 1.4 mL	<input type="text" value="✓"/>
cohumulone	<input type="text" value="25.6"/>	28 - 32%	<input type="text" value="↓"/>
Alpha Acids @ 10%	<input type="text" value="4.88"/>	6.0 - 10.5%	<input type="text" value="↓"/>
Beta Acids @ 10%	<input type="text" value="4.39"/>	2.2 - 4.8%	<input type="text" value="✓"/>
AROMA QUALITY (AQ)			
	% Area		
B-Pinene	<input type="text" value="NT"/>	0.40 - 1.00 %	<input type="text" value="NT"/>
Myrcene	<input type="text" value="NT"/>	60.00 - 70.00 %	<input type="text" value="NT"/>
Linalool	<input type="text" value="NT"/>	0.50 - 1.00 %	<input type="text" value="NT"/>
Caryophyllene	<input type="text" value="NT"/>	4.00 - 6.00 %	<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"/>	10.00 - 14.00 %	<input type="text" value="NT"/>
Geraniol	<input type="text" value="NT"/>	0.40 - 1.00 %	<input type="text" value="NT"/>
	mg/mL		
B-Pinene	<input type="text" value="NT"/>	4 - 10	<input type="text" value="NT"/>
Myrcene	<input type="text" value="NT"/>	600 - 700	<input type="text" value="NT"/>
Linalool	<input type="text" value="NT"/>	5 - 10	<input type="text" value="NT"/>
Caryophyllene	<input type="text" value="NT"/>	40 - 60	<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"/>	100 - 140	<input type="text" value="NT"/>
Geraniol	<input type="text" value="NT"/>	4 - 10	<input type="text" value="NT"/>
	mg/100g @ 10% Moisture		
B-Pinene	<input type="text" value="NT"/>	2.4 - 14	<input type="text" value="NT"/>
Myrcene	<input type="text" value="NT"/>	360 - 980	<input type="text" value="NT"/>
Linalool	<input type="text" value="NT"/>	3 - 14	<input type="text" value="NT"/>
Caryophyllene	<input type="text" value="NT"/>	24 - 84	<input type="text" value="NT"/>
Farnesene	<input type="text" value="NT"/>	0.06 - 14	<input type="text" value="NT"/>
Humulene	<input type="text" value="NT"/>	60 - 196	<input type="text" value="NT"/>
Geraniol	<input type="text" value="NT"/>	2.4 - 14	<input type="text" value="NT"/>

Signed: 
 Zachary Lilla - Lab Manager - TTB Certified Chemist