

## HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 23CHI1002-01LH

Variety: Chinook

Product: T-90 Pellet

Date : 12/13/2023



Certifying Officer: Zach Lilla - Lab Manager  
 TTB Certified Chemist - Member AOAC - ASBC - BJCP

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	10.0
		% Dry Matter	90.0
AAR	Xanthohumol by HPLC		<b>NT</b> mg/g
Hops-12	Hop Storage Index	HSI	0.267
Hops-13	Essential Oil by Steam Distillation	mL/100g	<b>1.58</b>
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	28.9 (% of Total AA)
ICE-3		<b>% Alpha Acids</b>	<b>12.78</b>
		Colupulone	54.1 (% of Total BA)
		<b>% Beta Acids</b>	<b>3.34</b>
		a/b ratio	3.83
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	NT
		Myrcene	NT
		Linalool	NT
		Caryophyllene	NT
		Farnesene	NT
		Humulene	NT
		Geraniol	NT

NT=NOT TESTED

Signed:

Zachary Lilla - Lab Manager - TTB Certified Chemist  
 AAR LAB - ADVANCED ANALYTICAL RESEARCH  
 2517 Advance Rd Ste. A Madison WI 53718



# AROMA QUALITY (AQ)

## HOP QUALITY REPORT



Customer : Wisconsin Hop Exchange

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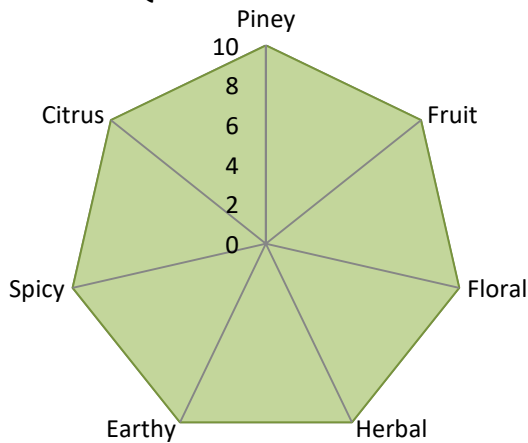
Certifying Officer: Zach Lilla - Lab Manager  
TTB Certified Chemist - Member AOAC - ASBC - BJCP

		Typical Range	
% Moisture	10.0	8 - 12 %	<input checked="" type="checkbox"/>
<b>HOP QUALITY (adjusted to 10% moisture)</b>			
Total Oil ml/100g	1.58	1.0 - 2.5 mL	<input checked="" type="checkbox"/>
cohumulone	28.9	27 - 31%	<input checked="" type="checkbox"/>
Alpha Acids	12.78	11.5 - 15%	<input checked="" type="checkbox"/>
Beta Acids	3.34	3.0 - 4.0%	<input checked="" type="checkbox"/>
Myrcene	NT	20.00 - 30.00 %	<input type="checkbox"/>

### AROMA QUALITY (AQ)

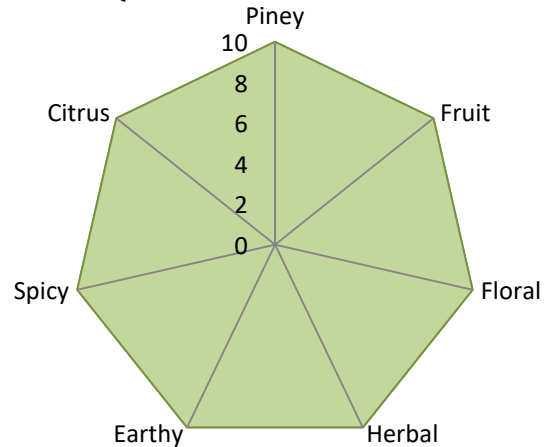
	% Area		mg/mL of Hop Oil		mg/100g of Hops (@10%H2O)	
B-Pinene	NT	0.20 - 0.60 %	NT	2.0 - 6.0	NT	2.0 - 15.0
Myrcene	NT	20.00 - 30.00 %	NT	200 - 300	NT	200 - 750
Linalool	NT	0.30 - 0.60 %	NT	3.0 - 6.0	NT	3.0 - 15.0
Caryophyllene	NT	8.00 - 12.00 %	NT	80 - 120	NT	80 - 300
Farnesene	NT	0.01 - 1.00 %	NT	0.1 - 10	NT	0.1 - 25
Humulene	NT	18.00 - 24.00 %	NT	180 - 240	NT	180 - 600
Geraniol	NT	0.50 - 1.00 %	NT	5.0 - 10.0	NT	5.0 - 25.0

### AQ vs VARIETY SPECS



**Arroma Intensity= 100**

### AQ vs ALL HOP VARIETIES



**Arroma Intensity= 100**

Signed: \_\_\_\_\_

Zachary Lilla - Lab Manager - TTB Certified Chemist

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