

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 23CAS07WI-01LH

Variety: Cascade

Product: T-90 Pellet

Date : 11/21/2023



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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	9.8
		% Dry Matter	90.2
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.227
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.49
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	33.7 (% of Total AA)
ICE-3		% Alpha Acids	7.33
		Colupulone	50.8 (% of Total BA)
		% Beta Acids	6.68
		a/b ratio	1.10
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



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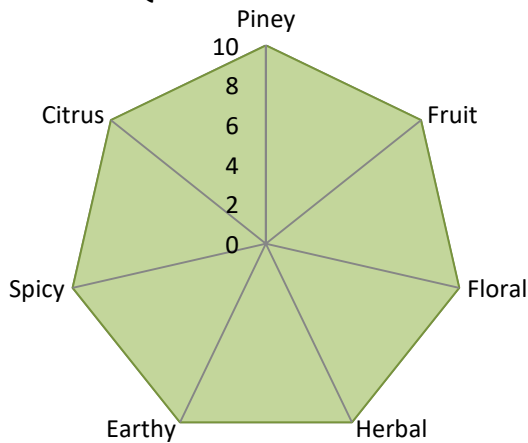
Certifying Officer: Zach Lilla - Lab Manager
TTB Certified Chemist - Member AOAC - ASBC - BJCP

		Typical Range	
% Moisture	9.8	8 - 12 %	<input checked="" type="checkbox"/>
HOP QUALITY (adjusted to 10% moisture)			
Total Oil ml/100g	1.49	0.8 - 2.5 mL	<input checked="" type="checkbox"/>
cohumulone	33.7	30 - 35%	<input checked="" type="checkbox"/>
Alpha Acids	7.31	5.5 - 9%	<input checked="" type="checkbox"/>
Beta Acids	6.66	6.0 - 7.5%	<input checked="" type="checkbox"/>
Myrcene	NT	45.00 - 60.00 %	<input type="checkbox"/>

AROMA QUALITY (AQ)

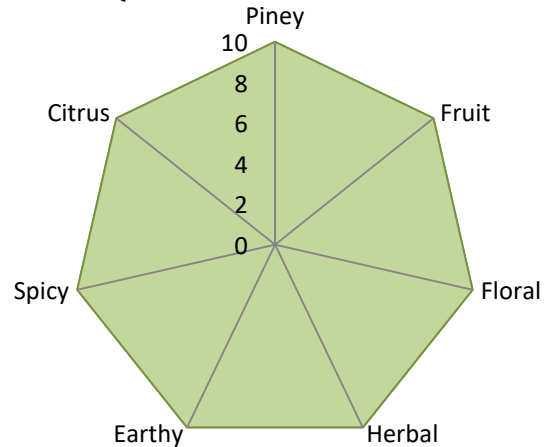
	% Area		mg/mL of Hop Oil		mg/100g of Hops (@10%H2O)	
B-Pinene	NT	0.50 - 0.80 %	NT	5 - 8	NT	4 - 20
Myrcene	NT	45.00 - 60.00 %	NT	450 - 600	NT	360 - 1500
Linalool	NT	0.30 - 0.60 %	NT	3 - 6	NT	2.4 - 15
Caryophyllene	NT	5.00 - 9.00 %	NT	50 - 90	NT	40 - 225
Farnesene	NT	6.00 - 9.00 %	NT	60 - 90	NT	48 - 225
Humulene	NT	14.00 - 20.00 %	NT	140 - 200	NT	112 - 500
Geraniol	NT	0.01 - 0.30 %	NT	0.1 - 3	NT	0.08 - 7.5

AQ vs VARIETY SPECS



Aroma Intensity= 100

AQ vs ALL HOP VARIETIES



Aroma Intensity= 100

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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