

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 24CAS06WI-01LH

Variety: Cascade

Product: T-90 Pellet

Date : 2/20/2025



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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	11.4
		% Dry Matter	88.6
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.255
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.47
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	32.9 (% of Total AA)
ICE-3		% Alpha Acids	6.73
		Colupulone	50.1 (% of Total BA)
		% Beta Acids	6.83
		a/b ratio	0.99
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	0.69 9.49
		Myrcene	52.61 824.20
		Linalool	0.38 6.17
		Caryophyllene	6.71 96.52
		Farnesene	6.04 107.03
		Humulene	16.21 231.24
		Geraniol	0.30 4.96

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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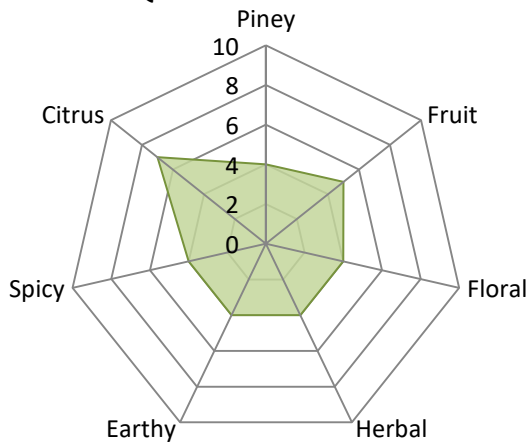
Certifying Officer: Zach Lilla - Lab Manager
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	Typical Range	
% Moisture 11.4	8 - 12 %	✓
HOP QUALITY (adjusted to 10% moisture)		
Total Oil ml/100g 1.49	0.8 - 2.5 mL	✓
cohumulone 32.9	30 - 35%	✓
Alpha Acids 6.84	5.5 - 9%	✓
Beta Acids 6.93	6.0 - 7.5%	✓
Myrcene 52.61	45.00 - 60.00 %	✓

AROMA QUALITY (AQ)

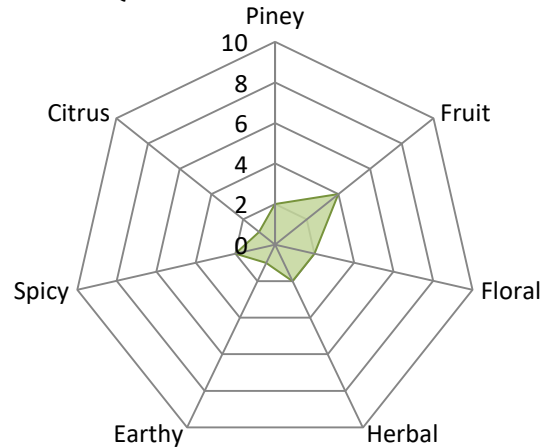
	% Area		mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)			
B-Pinene	0.69	0.50 - 0.80 %	✓	6.47	5 - 8	✓	9.63	4 - 20	✓
Myrcene	52.61	45.00 - 60.00 %	✓	561.98	450 - 600	✓	836.80	360 - 1500	✓
Linalool	0.38	0.30 - 0.60 %	✓	4.21	3 - 6	✓	6.27	2.4 - 15	✓
Caryophyllene	6.71	5.00 - 9.00 %	✓	65.81	50 - 90	✓	98.00	40 - 225	✓
Farnesene	6.04	6.00 - 9.00 %	✓	72.98	60 - 90	✓	108.67	48 - 225	✓
Humulene	16.21	14.00 - 20.00 %	✓	157.67	140 - 200	✓	234.78	112 - 500	✓
Geraniol	0.30	0.01 - 0.30 %	↑	3.38	0.1 - 3	↑	5.03	0.08 - 7.5	✓

AQ vs VARIETY SPECS



Aroma Intensity= 21

AQ vs ALL HOP VARIETIES



Aroma Intensity= 4

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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