

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 24COM02WI-01LH

Variety: Comet

Product: T-90 Pellet

Date : 3/15/2025



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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	11.0
		% Dry Matter	89.0
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.290
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.39
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	36.0 (% of Total AA)
ICE-3		% Alpha Acids	9.04
		Colupulone	58.9 (% of Total BA)
		% Beta Acids	3.57
		a/b ratio	2.53
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	0.48 6.32
		Myrcene	39.34 588.07
		Linalool	0.36 5.65
		Caryophyllene	16.99 233.19
		Farnesene	0.30 5.14
		Humulene	3.38 45.94
		Geraniol	0.48 7.49

NT=NOT TESTED

Signed: 
 Zachary Lilla - Lab Manager - TTB Certified Chemist



AROMA QUALITY (AQ)

HOP QUALITY REPORT



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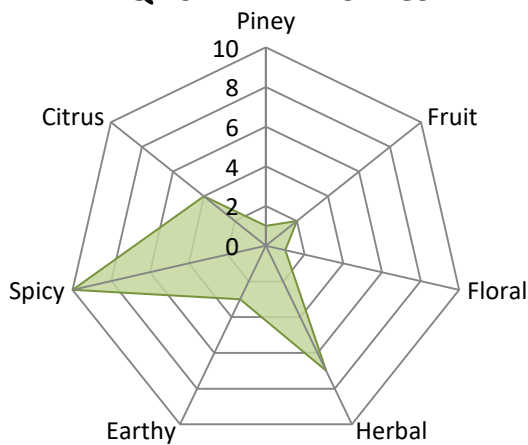
Certifying Officer: Zach Lilla - Lab Manager
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	Typical Range	
% Moisture <input style="width: 100px;" type="text" value="11.0"/>	8 - 12 %	<input checked="checked" style="width: 40px; height: 20px;" type="checkbox"/>
HOP QUALITY (adjusted to 10% moisture)		
Total Oil ml/100g <input style="width: 100px;" type="text" value="1.40"/>	1.2 - 2.0 mL	<input checked="checked" style="width: 40px; height: 20px;" type="checkbox"/>
cohumulone <input style="width: 100px;" type="text" value="36.0"/>	34 - 37%	<input checked="checked" style="width: 40px; height: 20px;" type="checkbox"/>
Alpha Acids <input style="width: 100px;" type="text" value="9.15"/>	8.0 - 10.5%	<input checked="checked" style="width: 40px; height: 20px;" type="checkbox"/>
Beta Acids <input style="width: 100px;" type="text" value="3.61"/>	4.0 - 5.0%	<input style="width: 40px; height: 20px;" type="checkbox"/>
Myrcene <input style="width: 100px;" type="text" value="39.34"/>	40.00 - 55.00 %	<input style="width: 40px; height: 20px;" type="checkbox"/>

AROMA QUALITY (AQ)

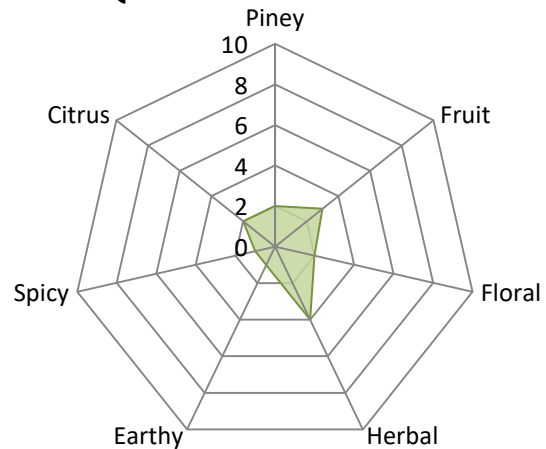
	% Area			mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)		
B-Pinene	0.48	0.70 - 1.20 %	↓	4.56	7 - 12	↓	6.40	8.4 - 24	↓
Myrcene	39.34	40.00 - 55.00 %	↓	424.41	400 - 550	✓	594.77	480 - 1100	✓
Linalool	0.36	0.50 - 0.80 %	↓	4.07	5 - 8	↓	5.71	6 - 16	↓
Caryophyllene	16.99	10.00 - 15.00 %	↑	168.29	100 - 150	↑	235.85	120 - 300	✓
Farnesene	0.30	0.01 - 1.00 %	✓	3.71	0.1 - 10	✓	5.20	0.12 - 20	✓
Humulene	3.38	1.00 - 2.00 %	↑	33.16	10 - 20	↑	46.47	12 - 40	↑
Geraniol	0.48	0.20 - 0.90 %	✓	5.41	2 - 9	✓	7.58	2.4 - 18	✓

AQ vs VARIETY SPECS



Aroma Intensity= 15

AQ vs ALL HOP VARIETIES



Aroma Intensity= 4

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

AAR LAB - ADVANCED ANALYTICAL RESEARCH

2517 Advance Rd Ste. A Madison WI 53718

info@aarlab.com

www.aarlab.com



608-622-7522