

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 24CEN02WI-02LH

Variety: Centennial

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	9.1
		% Dry Matter	90.9
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.342
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.39
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	25.3 (% of Total AA)
ICE-3		% Alpha Acids	8.84
		Colupulone	51.2 (% of Total BA)
		% Beta Acids	2.95
		a/b ratio	3.00
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	1.02 12.88
		Myrcene	60.64 871.47
		Linalool	0.53 7.87
		Caryophyllene	5.56 73.43
		Farnesene	0.11 1.84
		Humulene	11.65 152.42
		Geraniol	1.34 20.11

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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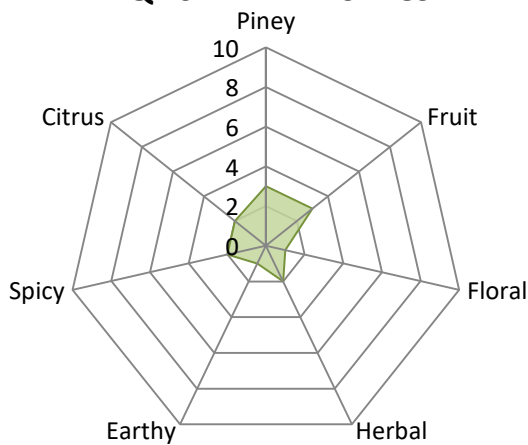
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	Typical Range	
% Moisture 9.1	8 - 12 %	✓
HOP QUALITY (adjusted to 10% moisture)		
Total Oil ml/100g 1.38	1.0 - 3.0 mL	✓
cohumulone 25.3	23 - 27%	✓
Alpha Acids 8.74	7.0 - 12%	✓
Beta Acids 2.92	3.5 - 5.5%	↓
Myrcene 60.64	55.00 - 65.00 %	✓

AROMA QUALITY (AQ)

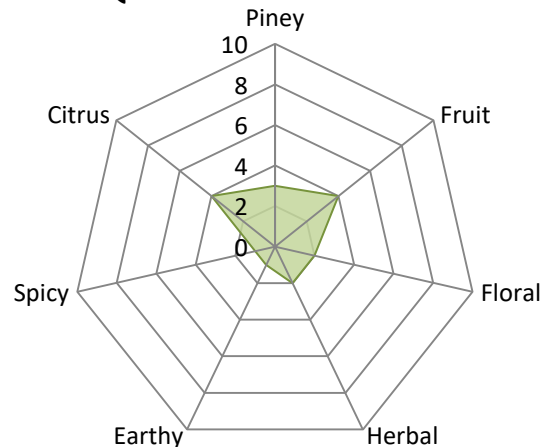
	% Area		mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)			
B-Pinene	1.02	0.60 - 1.00 %	↑	9.25	6 - 10	✓	12.75	6 - 30	✓
Myrcene	60.64	55.00 - 65.00 %	✓	625.84	550 - 650	✓	862.44	550 - 1950	✓
Linalool	0.53	0.60 - 0.90 %	↓	5.66	6 - 9	↓	7.79	6 - 27	✓
Caryophyllene	5.56	5.00 - 7.00 %	✓	52.73	50 - 70	✓	72.67	50 - 210	✓
Farnesene	0.11	0.01 - 1.00 %	✓	1.32	0.1 - 10	✓	1.82	0.1 - 30	✓
Humulene	11.65	10.00 - 20.00 %	✓	109.46	100 - 200	✓	150.84	100 - 600	✓
Geraniol	1.34	1.20 - 1.80 %	✓	14.44	12 - 18	✓	19.90	12 - 54	✓

AQ vs VARIETY SPECS



Aroma Intensity= 4

AQ vs ALL HOP VARIETIES



Aroma Intensity= 6

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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