

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 25CEN04WI-01FB

Variety: Centennial

Product: T-90 Pellet

Date : 2/23/2026



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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	11.6
		% Dry Matter	88.4
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.315
Hops-13	Essential Oil by Steam Distillation	mL/100g	2.13
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	25.1 (% of Total AA)
ICE-3		% Alpha Acids	11.02
		Colupulone	50.5 (% of Total BA)
		% Beta Acids	3.50
		a/b ratio	3.15
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	1.06 21.35
		Myrcene	69.02 1573.01
		Linalool	0.53 12.52
		Caryophyllene	4.48 93.67
		Farnesene	0.13 3.35
		Humulene	8.88 184.29
		Geraniol	1.08 25.82

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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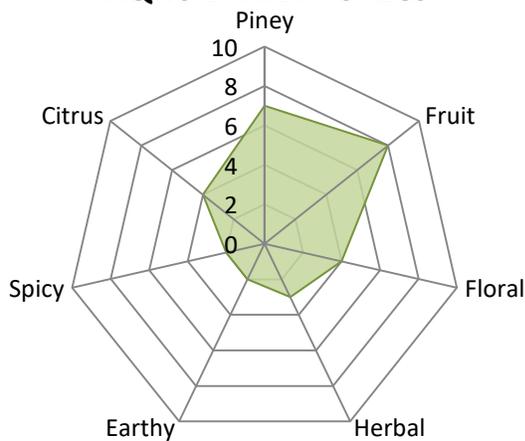
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	Typical Range	
% Moisture 11.6	8 - 12 %	✓
HOP QUALITY (adjusted to 10% moisture)		
Total Oil ml/100g 2.17	1.0 - 3.0 mL	✓
cohumulone 25.1	23 - 27%	✓
Alpha Acids 11.22	7.0 - 12%	✓
Beta Acids 3.56	3.5 - 5.5%	✓
Myrcene 69.02	55.00 - 65.00 %	↑

AROMA QUALITY (AQ)

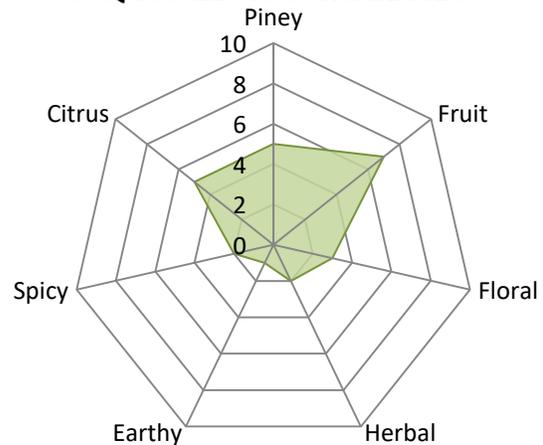
	% Area		mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)			
B-Pinene	1.06	0.60 - 1.00 %	↑	10.04	6 - 10	↑	21.74	6 - 30	✓
Myrcene	69.02	55.00 - 65.00 %	↑	739.41	550 - 650	↑	1601.61	550 - 1950	✓
Linalool	0.53	0.60 - 0.90 %	↓	5.88	6 - 9	↓	12.75	6 - 27	✓
Caryophyllene	4.48	5.00 - 7.00 %	↓	44.03	50 - 70	↓	95.37	50 - 210	✓
Farnesene	0.13	0.01 - 1.00 %	✓	1.58	0.1 - 10	✓	3.41	0.1 - 30	✓
Humulene	8.88	10.00 - 20.00 %	↓	86.63	100 - 200	↓	187.65	100 - 600	✓
Geraniol	1.08	1.20 - 1.80 %	↓	12.14	12 - 18	✓	26.29	12 - 54	✓

AQ vs VARIETY SPECS



Aroma Intensity= 21

AQ vs ALL HOP VARIETIES



Aroma Intensity= 14

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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