

## HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 24CEN04WI-01LH

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	10.4
		% Dry Matter	89.6
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.314
Hops-13	Essential Oil by Steam Distillation	mL/100g	2.49
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	25.2 (% of Total AA)
ICE-3		% Alpha Acids	11.85
		Colupulone	50.6 (% of Total BA)
		% Beta Acids	3.71
		a/b ratio	3.19
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	1.02 22.68
		Myrcene	66.07 1668.25
		Linalool	0.57 14.91
		Caryophyllene	4.23 98.01
		Farnesene	0.09 2.58
		Humulene	9.03 207.53
		Geraniol	1.18 31.28

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



Customer : Wisconsin Hop Exchange

Sample ID: 24CEN04WI-01LH

Variety: Centennial

Product: T-90 Pellet

Date : 2/20/2025



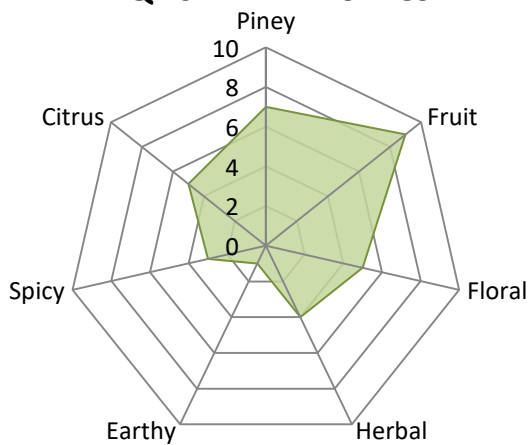
Certifying Officer: Zach Lilla - Lab Manager  
TTB Certified Chemist - Member AOAC - ASBC - BJCP

% Moisture	10.4	Typical Range 8 - 12 %	✓
<b>HOP QUALITY (adjusted to 10% moisture)</b>			
Total Oil ml/100g	2.50	1.0 - 3.0 mL	✓
cohumulone	25.2	23 - 27%	✓
Alpha Acids	11.90	7.0 - 12%	✓
Beta Acids	3.73	3.5 - 5.5%	✓
Myrcene	66.07	55.00 - 65.00 %	↑

### AROMA QUALITY (AQ)

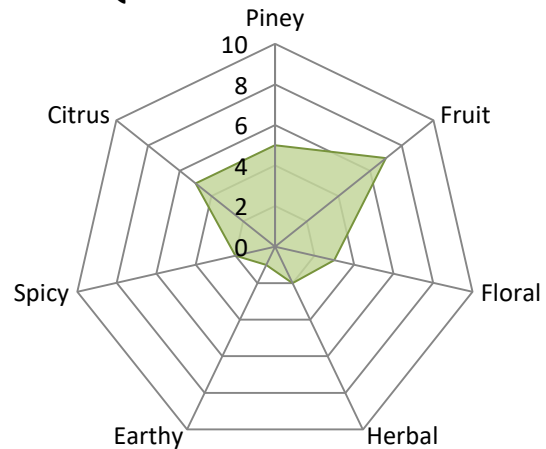
	% Area			mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)		
	Value	Range	Dev	Value	Range	Dev	Value	Range	Dev
B-Pinene	1.02	0.60 - 1.00 %	↑	9.10	6 - 10	✓	22.78	6 - 30	✓
Myrcene	66.07	55.00 - 65.00 %	↑	669.27	550 - 650	↑	1675.14	550 - 1950	✓
Linalool	0.57	0.60 - 0.90 %	↓	5.98	6 - 9	↓	14.97	6 - 27	✓
Caryophyllene	4.23	5.00 - 7.00 %	↓	39.32	50 - 70	↓	98.42	50 - 210	✓
Farnesene	0.09	0.01 - 1.00 %	✓	1.04	0.1 - 10	✓	2.59	0.1 - 30	✓
Humulene	9.03	10.00 - 20.00 %	↓	83.26	100 - 200	↓	208.39	100 - 600	✓
Geraniol	1.18	1.20 - 1.80 %	↓	12.55	12 - 18	✓	31.40	12 - 54	✓

#### AQ vs VARIETY SPECS



**Aroma Intensity= 26**

#### AQ vs ALL HOP VARIETIES



**Aroma Intensity= 14**

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](http://www.aarlab.com)



608-622-7522