

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 25CHI05WI-01FB

Variety: Chinook

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	11.7
		% Dry Matter	88.3
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.278
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.57
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	29.3 (% of Total AA)
ICE-3		% Alpha Acids	12.72
		Colupulone	53.4 (% of Total BA)
		% Beta Acids	3.07
		a/b ratio	4.14
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	0.44 6.62
		Myrcene	32.73 555.26
		Linalool	0.26 4.60
		Caryophyllene	9.94 154.90
		Farnesene	0.12 2.33
		Humulene	20.86 322.34
		Geraniol	0.81 14.42

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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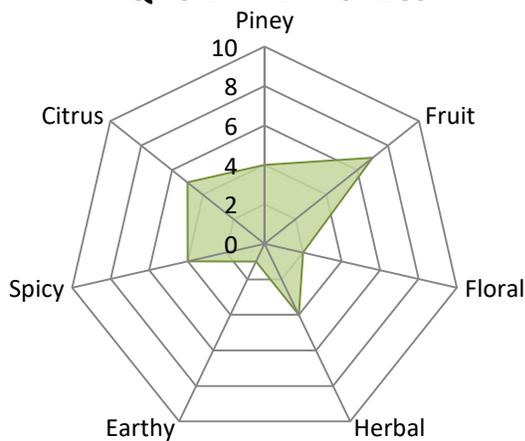
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	Typical Range	
% Moisture 11.7	8 - 12 %	✓
HOP QUALITY (adjusted to 10% moisture)		
Total Oil ml/100g 1.60	1.0 - 2.5 mL	✓
cohumulone 29.3	27 - 31%	✓
Alpha Acids 12.96	11.5 - 15%	✓
Beta Acids 3.13	3.0 - 4.0%	✓
Myrcene 32.73	20.00 - 30.00 %	↑

AROMA QUALITY (AQ)

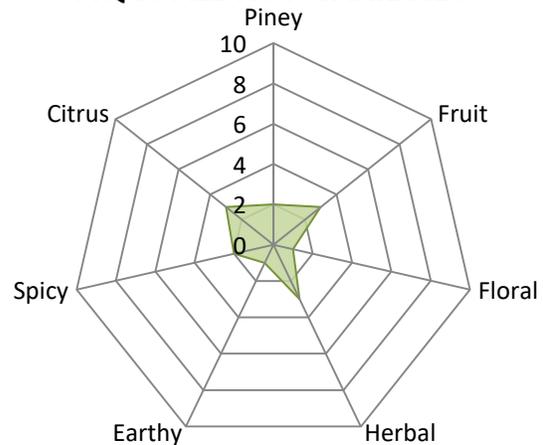
	% Area			mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)		
B-Pinene	0.44	0.20 - 0.60 %	✓	4.22	2.0 - 6.0	✓	6.75	2.0 - 15.0	✓
Myrcene	32.73	20.00 - 30.00 %	↑	353.54	200 - 300	↑	565.79	200 - 750	✓
Linalool	0.26	0.30 - 0.60 %	↓	2.93	3.0 - 6.0	↓	4.69	3.0 - 15.0	✓
Caryophyllene	9.94	8.00 - 12.00 %	✓	98.63	80 - 120	✓	157.84	80 - 300	✓
Farnesene	0.12	0.01 - 1.00 %	✓	1.49	0.1 - 10	✓	2.38	0.1 - 25	✓
Humulene	20.86	18.00 - 24.00 %	✓	205.24	180 - 240	✓	328.45	180 - 600	✓
Geraniol	0.81	0.50 - 1.00 %	✓	9.18	5.0 - 10.0	✓	14.70	5.0 - 25.0	✓

AQ vs VARIETY SPECS



Aroma Intensity= 14

AQ vs ALL HOP VARIETIES



Aroma Intensity= 4

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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