

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 24VTA03WI-01LH

Variety: Vista

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	11.4
		% Dry Matter	88.6
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.263
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.51
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	33.9 (% of Total AA)
ICE-3		% Alpha Acids	8.60
		Colupulone	60.1 (% of Total BA)
		% Beta Acids	3.62
		a/b ratio	2.38
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	0.33 4.72
		Myrcene	30.26 493.47
		Linalool	0.61 10.25
		Caryophyllene	12.39 185.50
		Farnesene	0.08 1.50
		Humulene	18.66 277.11
		Geraniol	0.16 2.71

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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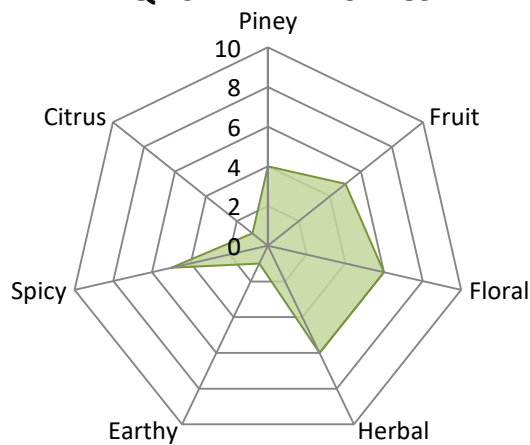
Certifying Officer: Zach Lilla - Lab Manager
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	Typical Range	
% Moisture 11.4	8 - 12 %	✓
HOP QUALITY (adjusted to 10% moisture)		
Total Oil ml/100g 1.53	0.8 - 2.0 ml	✓
cohumulone 33.9	29 - 34%	✓
Alpha Acids 8.74	11 - 12%	↓
Beta Acids 3.68	3.5 - 5.5%	✓
Myrcene 30.26	30.00 - 40.00 %	✓

AROMA QUALITY (AQ)

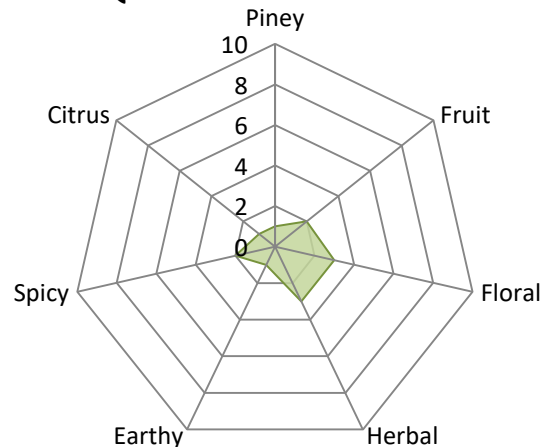
	% Area		mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)			
B-Pinene	0.33	0.20 - 0.60 %	✓	3.13	2 - 6	✓	4.79	1.6 - 12	✓
Myrcene	30.26	30.00 - 40.00 %	✓	327.56	300 - 400	✓	501.55	240 - 800	✓
Linalool	0.61	0.40 - 0.80 %	✓	6.81	4 - 8	✓	10.42	3.2 - 16	✓
Caryophyllene	12.39	10.00 - 14.00 %	✓	123.13	100 - 140	✓	188.53	80 - 280	✓
Farnesene	0.08	0.10 - 1.00 %	↓	1.00	1 - 10	↓	1.53	0.8 - 20	✓
Humulene	18.66	18.00 - 22.00 %	✓	183.94	180 - 220	✓	281.64	144 - 440	✓
Geraniol	0.16	0.40 - 1.00 %	↓	1.80	4 - 10	↓	2.75	3.2 - 20	↓

AQ vs VARIETY SPECS



Aroma Intensity= 15

AQ vs ALL HOP VARIETIES



Aroma Intensity= 4

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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