

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 23VTA03WI-01LH

Variety: Vista

Product: T-90 Pellet

Date : 12/13/2023



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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	10.1
		% Dry Matter	89.9
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.254
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.71
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	31.7 (% of Total AA)
ICE-3		% Alpha Acids	9.96
		Colupulone	59.1 (% of Total BA)
		% Beta Acids	3.84
		a/b ratio	2.59
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	NT
		Myrcene	NT
		Linalool	NT
		Caryophyllene	NT
		Farnesene	NT
		Humulene	NT
		Geraniol	NT

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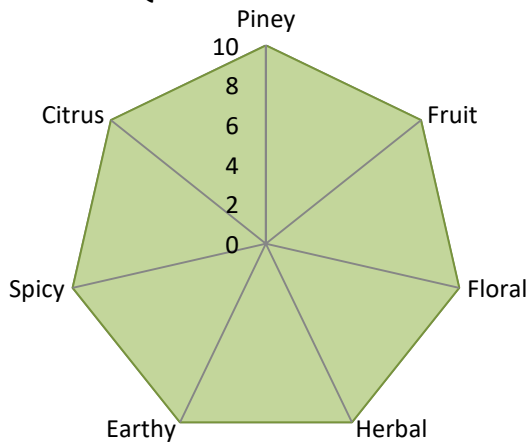
Certifying Officer: Zach Lilla - Lab Manager
TTB Certified Chemist - Member AOAC - ASBC - BJCP

	Typical Range	
% Moisture <input style="width: 80px;" type="text" value="10.1"/>	8 - 12 %	<input checked="" type="checkbox"/>
HOP QUALITY (adjusted to 10% moisture)		
Total Oil ml/100g <input style="width: 80px;" type="text" value="1.72"/>	0.8 - 2.0 ml	<input checked="" type="checkbox"/>
cohumulone <input style="width: 80px;" type="text" value="31.7"/>	29 - 34%	<input checked="" type="checkbox"/>
Alpha Acids <input style="width: 80px;" type="text" value="9.97"/>	11 - 12%	<input type="checkbox" value="↓"/>
Beta Acids <input style="width: 80px;" type="text" value="3.85"/>	3.5 - 5.5%	<input checked="" type="checkbox"/>
Myrcene <input style="width: 80px;" type="text" value="NT"/>	30.00 - 40.00 %	<input type="checkbox"/>

AROMA QUALITY (AQ)

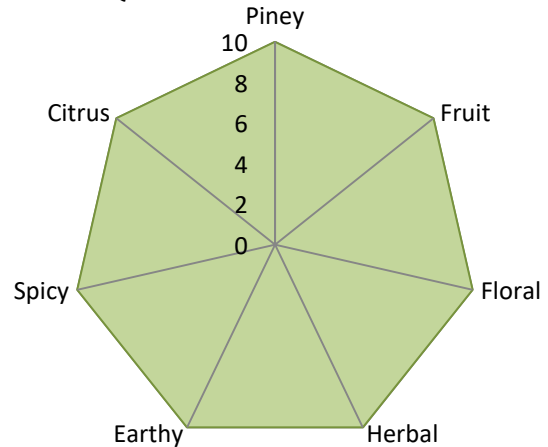
		% Area	mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)		
B-Pinene	NT	0.20 - 0.60 %	NT	2 - 6	NT	1.6 - 12		
Myrcene	NT	30.00 - 40.00 %	NT	300 - 400	NT	240 - 800		
Linalool	NT	0.40 - 0.80 %	NT	4 - 8	NT	3.2 - 16		
Caryophyllene	NT	10.00 - 14.00 %	NT	100 - 140	NT	80 - 280		
Farnesene	NT	0.10 - 1.00 %	NT	1 - 10	NT	0.8 - 20		
Humulene	NT	18.00 - 22.00 %	NT	180 - 220	NT	144 - 440		
Geraniol	NT	0.40 - 1.00 %	NT	4 - 10	NT	3.2 - 20		

AQ vs VARIETY SPECS



Aroma Intensity= 100

AQ vs ALL HOP VARIETIES



Aroma Intensity= 100

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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