

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 23ZEU1013-01LH

Variety: Zeus

Product: T-90 Pellet

Date : 12/22/2023



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	0.264
Hops-13	Essential Oil by Steam Distillation	mL/100g	2.61
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	30.2 (% of Total AA)
ICE-3		% Alpha Acids	17.43
		Colupulone	57.5 (% of Total BA)
		% Beta Acids	5.18
		a/b ratio	3.37
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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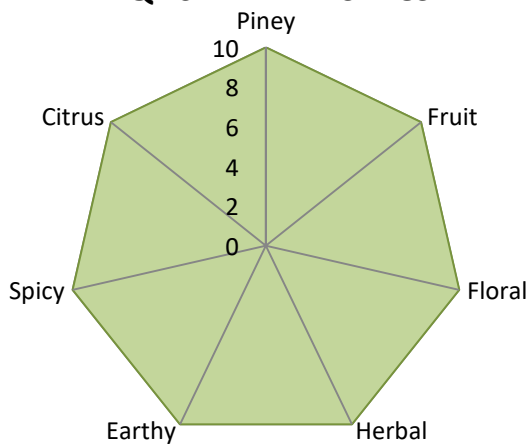
Certifying Officer: Zach Lilla - Lab Manager
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		Typical Range	
% Moisture	10.1	8 - 12 %	<input checked="" type="checkbox"/>
HOP QUALITY (adjusted to 10% moisture)			
Total Oil ml/100g	2.61	2.5 - 4.5 mL	<input checked="" type="checkbox"/>
cohumulone	30.2	26 - 31%	<input checked="" type="checkbox"/>
Alpha Acids	17.46	13.5 - 17.5%	<input checked="" type="checkbox"/>
Beta Acids	5.18	4.0 - 5.5%	<input checked="" type="checkbox"/>
Myrcene	NT	45.00 - 55.00 %	<input type="checkbox"/>

AROMA QUALITY (AQ)

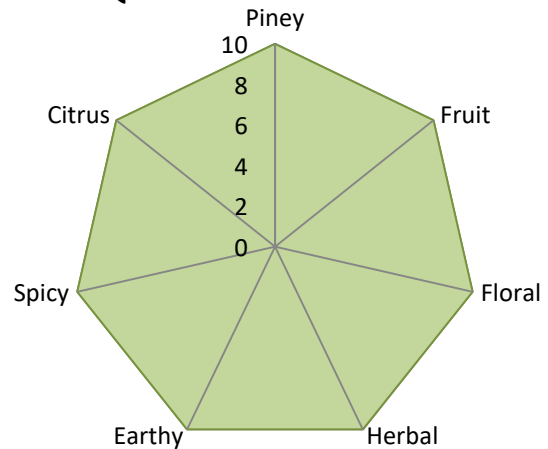
	% Area		mg/mL of Hop Oil		mg/100g of Hops (@10%H2O)	
B-Pinene	NT	0.50 - 1.10 %	NT	5 - 11	NT	12.5 - 49.5
Myrcene	NT	45.00 - 55.00 %	NT	450 - 550	NT	1125 - 2475
Linalool	NT	0.30 - 0.70 %	NT	3 - 7	NT	7.5 - 31.5
Caryophyllene	NT	6.00 - 10.00 %	NT	60 - 100	NT	150 - 450
Farnesene	NT	0.01 - 1.00 %	NT	0.1 - 10	NT	0.25 - 45
Humulene	NT	9.00 - 14.00 %	NT	90 - 140	NT	225 - 630
Geraniol	NT	0.10 - 0.60 %	NT	1 - 6	NT	2.5 - 27

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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