

## HOP QUALITY REPORT CERTIFICATE OF ANALYSIS



To: Wisconsin Hop Exchange

Sample ID: 23PAR1087-01LH

Variety: Paradigm™

Product: T-90 Pellet

Date : 12/4/2023

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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	11.6
		% Dry Matter	88.4
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.263
Hops-13	Essential Oil by Steam Distillation	mL/100g	2.24
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	34.0 (% of Total AA)
ICE-3		% Alpha Acids	9.91
		Colupulone	58.6 (% of Total BA)
		% Beta Acids	5.71
		a/b ratio	1.73
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



Customer : Wisconsin Hop Exchange

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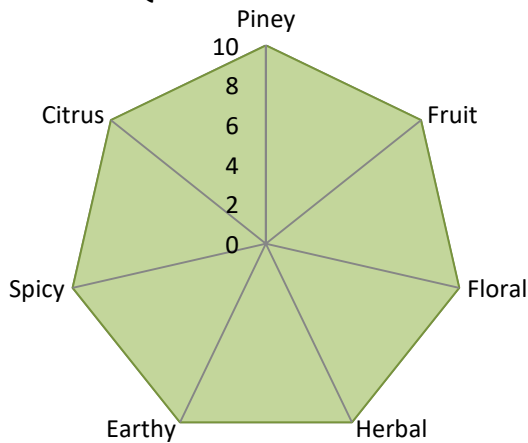
Certifying Officer: Zach Lilla - Lab Manager  
TTB Certified Chemist - Member AOAC - ASBC - BJCP

		Typical Range	
% Moisture	11.6	8 - 12 %	<input checked="" type="checkbox"/>
<b>HOP QUALITY (adjusted to 10% moisture)</b>			
Total Oil ml/100g	2.28	1.5 - 2.5 mL	<input checked="" type="checkbox"/>
cohumulone	34.0	33 - 37%	<input checked="" type="checkbox"/>
Alpha Acids	10.08	8.0 - 11.7 %	<input type="checkbox"/>
Beta Acids	5.81	3.9 - 6.3%	<input checked="" type="checkbox"/>
Myrcene	NT	35.00 - 45.00 %	<input type="checkbox"/>

### AROMA QUALITY (AQ)

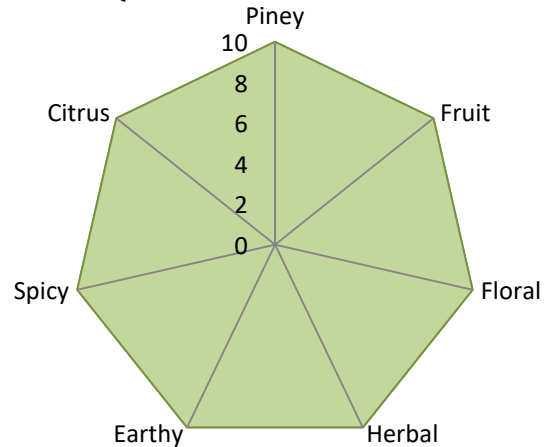
	% Area		mg/mL of Hop Oil		mg/100g of Hops (@10%H2O)	
B-Pinene	NT	0.40 - 1.00 %	NT	4 - 10	NT	6 - 25
Myrcene	NT	35.00 - 45.00 %	NT	350 - 450	NT	525 - 1125
Linalool	NT	0.50 - 1.00 %	NT	5 - 10	NT	7.5 - 25
Caryophyllene	NT	4.00 - 6.00 %	NT	40 - 60	NT	60 - 150
Farnesene	NT	0.01 - 1.00 %	NT	0.1 - 10	NT	0.15 - 25
Humulene	NT	4.00 - 6.00 %	NT	40 - 60	NT	60 - 150
Geraniol	NT	0.01 - 1.00 %	NT	0.1 - 10	NT	0.15 - 25

### 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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