

## HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 22CEN08WI-01LH

Variety: Centennial

Whole Cone

Date : 12/12/2022

Pellet



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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	10.3
		% Dry Matter	89.7
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.298
Hops-13	Essential Oil by Steam Distillation	mL/100g	2.14
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	25.0 (% of Total AA)
ICE-3		% Alpha Acids	9.20
		Colupulone	50.9 (% of Total BA)
		% Beta Acids	3.51
		a/b ratio	2.62
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

Sample ID: 22CEN08WI01-LH

Variety: Centennial

Whole Cone

Pellet

Date : 12/12/2022

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TTB Certified Chemist - Member AOAC - ASBC - BJCP

	% Moisture <input style="width: 80px;" type="text" value="10.3"/>	Typical Range 8 - 12%	<input checked="" type="checkbox"/>				
<b>HOP QUALITY (adjusted to 10% moisture)</b>							
	Total Oil ml/100g <input style="width: 80px;" type="text" value="2.14"/>	1.0 - 3.0 mL	<input checked="" type="checkbox"/>				
	cohumulone <input style="width: 80px;" type="text" value="25.0"/>	23 - 27%	<input checked="" type="checkbox"/>				
	Alpha Acids <input style="width: 80px;" type="text" value="9.23"/>	7.0 - 12%	<input checked="" type="checkbox"/>				
	Beta Acids <input style="width: 80px;" type="text" value="3.52"/>	3.5 - 5.5%	<input checked="" type="checkbox"/>				
<b>AROMA QUALITY (AQ)</b>							
	% Area		mg/mL of Hop Oil		mg/100g of Hops (@10%H2O)		
B-Pinene	NT	0.60 - 1.00 %	NT	6 - 10	NT	6 - 30	
Myrcene	NT	55.00 - 65.00 %	NT	550 - 650	NT	550 - 1950	
Linalool	NT	0.60 - 0.90 %	NT	6 - 9	NT	6 - 27	
Caryophyllene	NT	5.00 - 7.00 %	NT	50 - 70	NT	50 - 210	
Farnesene	NT	0.01 - 1.00 %	NT	0.1 - 10	NT	0.1 - 30	
Humulene	NT	10.00 - 20.00 %	NT	100 - 200	NT	100 - 600	
Geraniol	NT	1.20 - 1.80 %	NT	12 - 18	NT	12 - 54	
<b>AQ vs VARIETY SPECS</b>				<b>AQ vs ALL HOP VARIETIES</b>			
<b>Aroma Intensity= 100</b>				<b>Aroma Intensity= 100</b>			

Signed: \_\_\_\_\_  
 Zachary Lilla - Lab Manager - TTB Certified Chemist

