

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS



To: Wisconsin Hop Exchange

Sample ID: 25BGO02WI-01FB

Variety: Brewer's Gold

Product: T-90 Pellet

Date : 2/23/2026

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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	11.7
		% Dry Matter	88.3
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.294
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.77
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	33.6 (% of Total AA)
ICE-3		% Alpha Acids	9.40
		Colupulone	61.5 (% of Total BA)
		% Beta Acids	4.78
		a/b ratio	1.97
Hops-17	Hop Essential Oil by GC-FID (as is)	% area	mg/100g
		B-Pinene	0.75 13.50
		Myrcene	53.15 1088.88
		Linalool	0.43 9.20
		Caryophyllene	10.09 189.82
		Farnesene	0.07 1.56
		Humulene	19.38 361.60
		Geraniol	0.80 17.25

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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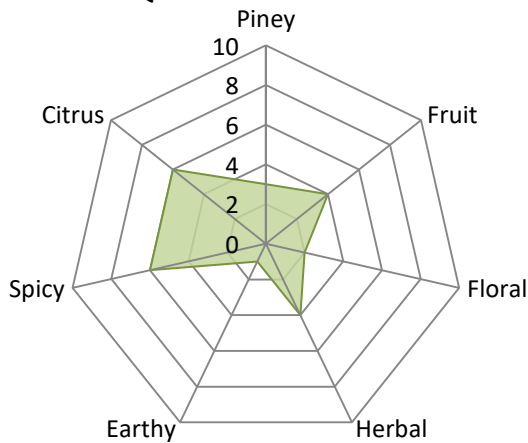
Certifying Officer: Zach Lilla - Lab Manager
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	Typical Range	
% Moisture <input type="text" value="11.7"/>	8 - 12 %	<input checked="" type="checkbox"/>
HOP QUALITY (adjusted to 10% moisture)		
Total Oil ml/100g <input type="text" value="1.81"/>	1.5 - 3.0 mL	<input checked="" type="checkbox"/>
cohumulone <input type="text" value="33.6"/>	32 - 35%	<input checked="" type="checkbox"/>
Alpha Acids <input type="text" value="9.58"/>	8.0 - 11%	<input checked="" type="checkbox"/>
Beta Acids <input type="text" value="4.87"/>	4.0 - 6.5%	<input checked="" type="checkbox"/>
Myrcene <input type="text" value="53.15"/>	45.00 - 60.00 %	<input checked="" type="checkbox"/>

AROMA QUALITY (AQ)

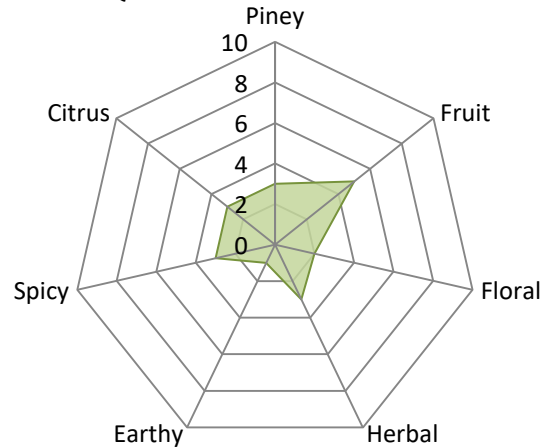
	% Area		mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)			
B-Pinene	0.75	0.50 - 1.00 %	<input checked="" type="checkbox"/>	7.63	5 - 10	<input checked="" type="checkbox"/>	13.77	7.5 - 30	<input checked="" type="checkbox"/>
Myrcene	53.15	45.00 - 60.00 %	<input checked="" type="checkbox"/>	614.91	450 - 600	↑	1110.16	675 - 1800	<input checked="" type="checkbox"/>
Linalool	0.43	0.50 - 0.80 %	↓	5.20	5 - 8	<input checked="" type="checkbox"/>	9.38	7.5 - 24	<input checked="" type="checkbox"/>
Caryophyllene	10.09	8.00 - 12.00 %	<input checked="" type="checkbox"/>	107.19	80 - 120	<input checked="" type="checkbox"/>	193.53	120 - 360	<input checked="" type="checkbox"/>
Farnesene	0.07	0.01 - 1.00 %	<input checked="" type="checkbox"/>	0.88	0.1 - 10	<input checked="" type="checkbox"/>	1.59	0.15 - 30	<input checked="" type="checkbox"/>
Humulene	19.38	12.00 - 18.00 %	↑	204.20	120 - 180	↑	368.67	180 - 540	<input checked="" type="checkbox"/>
Geraniol	0.80	0.01 - 1.00 %	<input checked="" type="checkbox"/>	9.74	0.1 - 10	<input checked="" type="checkbox"/>	17.58	0.15 - 30	<input checked="" type="checkbox"/>

AQ vs VARIETY SPECS



Aroma Intensity= 13

AQ vs ALL HOP VARIETIES



Aroma Intensity= 8

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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