

HOP AROMA QUALITY (AQ) CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 21SNT1024-01FB

Variety: Santiam

Date : 11/9/2021

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



Method			
Hops-4C	Moisture Analysis	% Moisture	10.7
		% Dry Matter	89.3
AAR	Xanthohumol by HPLC		NT mg/g
Hops-12	Hop Storage Index	HSI	0.282
Hops-13	Essential Oil by Steam Distillation	mL/100g	2.07
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	23.0 (% of Total AA)
ICE-3		% Alpha Acids	6.19
		Colupulone	39.1 (% of Total BA)
		% Beta Acids	6.89
		a/b ratio	0.90
Hops-17	Hop Essential Oil by GC-FID (as is)		
		% area	mg/100g
		B-Pinene	0.30 7.33
		Myrcene	26.94 662.96
		Linalool	0.65 16.05
		Caryophyllene	8.43 207.48
		Farnesene	17.27 424.86
		Humulene	22.95 564.65
		Geraniol	0.04 1.09

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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Date : 11/9/2021

% Moisture	10.7	Typical Range 8 - 12%	✓
Total Oil ml/100g @ 10%	2.09	1.0 - 2.2 mL	✓
cohumulone	23.0	22 - 24%	✓
Alpha Acids @ 10%	6.24	6.0 - 8.5%	✓
Beta Acids @ 10%	6.94	7.0 - 8.0%	↓
AROMA QUALITY (AQ)			
	% Area		
B-Pinene	0.30	0.10 - 0.50 %	✓
Myrcene	26.94	15.00 - 25.00 %	↑
Linalool	0.65	0.70 - 1.30 %	↓
Caryophyllene	8.43	6.00 - 9.00 %	✓
Farnesene	17.27	14.00 - 18.00 %	✓
Humulene	22.95	20.00 - 30.00 %	✓
Geraniol	0.04	0.01 - 0.40 %	✓
	mg/mL		
B-Pinene	3.54	1 - 5	✓
Myrcene	320.38	150 - 250	↑
Linalool	7.76	7 - 13	✓
Caryophyllene	100.27	60 - 90	↑
Farnesene	205.32	140 - 180	↑
Humulene	272.87	200 - 300	✓
Geraniol	0.53	0.1 - 4	✓
	mg/100g @ 10% Moisture		
B-Pinene	7.39	1 - 11	✓
Myrcene	668.12	150 - 550	↑
Linalool	16.18	7 - 28.6	✓
Caryophyllene	209.09	60 - 198	↑
Farnesene	428.17	140 - 396	↑
Humulene	569.04	200 - 660	✓
Geraniol	1.10	0.1 - 8.8	✓

Signed: _____

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