

HOP AROMA QUALITY (AQ) CERTIFICATE OF ANALYSIS

To: Wisconsin Hop Exchange

Sample ID: 21SOR1024-01FB

Variety: Sorachi Ace

Date : 11/9/2021

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



Method			
Hops-4C	Moisture Analysis	% Moisture	11.8
		% Dry Matter	88.2
AAR	Xanthohumol by HPLC	NT	mg/g
Hops-12	Hop Storage Index	HSI	0.289
Hops-13	Essential Oil by Steam Distillation	mL/100g	4.10
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	26.8 (% of Total AA)
ICE-3		% Alpha Acids	10.54
		Colupulone	50.3 (% of Total BA)
		% Beta Acids	8.28
		a/b ratio	1.27
Hops-17	Hop Essential Oil by GC-FID		
	(as is)	% area	mg/100g
		B-Pinene	0.57 28.24
		Myrcene	40.84 2036.07
		Linalool	0.25 12.25
		Caryophyllene	11.43 569.78
		Farnesene	3.95 196.89
		Humulene	28.58 1424.98
		Geraniol	0.13 6.26

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	11.8	Typical Range 8 - 12%	✓
Total Oil ml/100g @ 10%	4.19	1.5 - 3.0 mL	↑
cohumulone	26.8	25 - 28%	✓
Alpha Acids @ 10%	10.76	11.5 - 14.5%	↓
Beta Acids @ 10%	8.45	6.0 - 7.5%	↑
AROMA QUALITY (AQ)			
	% Area		
B-Pinene	0.57	0.40 - 1.00 %	✓
Myrcene	40.84	30.00 - 34.00 %	↑
Linalool	0.25	0.50 - 1.00 %	↓
Caryophyllene	11.43	6.00 - 8.00 %	↑
Farnesene	3.95	6.50 - 8.50 %	↓
Humulene	28.58	18.00 - 22.00 %	↑
Geraniol	0.13	0.40 - 1.00 %	↓
	mg/mL		
B-Pinene	6.88	4 - 10	✓
Myrcene	496.01	300 - 340	↑
Linalool	2.99	5 - 10	↓
Caryophyllene	138.81	60 - 80	↑
Farnesene	47.96	65 - 85	↓
Humulene	347.14	180 - 220	↑
Geraniol	1.53	4 - 10	↓
	mg/100g @ 10% Moisture		
B-Pinene	28.82	6 - 30	✓
Myrcene	2077.55	450 - 1020	↑
Linalool	12.50	7.5 - 30	✓
Caryophyllene	581.39	90 - 240	↑
Farnesene	200.90	97.5 - 255	✓
Humulene	1454.01	270 - 660	↑
Geraniol	6.39	6 - 30	✓

Signed: _____

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