ADVANCED ANALYTICAL RESEARCH
2517 Advance Rd, Ste A
Madison WI 53718
www.aarlab.com

HOP QUALITY REPORT
CERTIFICATE OF ANALYSIS

To: Fine Bine Farms

Sample ID: 23TRI1013-01FB

Variety: Triumph Product: T-90 Pellet

Date : 10/18/2023

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

Method				
Hops-4C	Moisture Analysis	% Moisture	10.4	
		% Dry Matter	89.6	
AAR	Xanthohumol by HPLC		**NT**	**mg/g**
Hops-12	Hop Storage Index	HSI	0.261	
Hops-13	Essential Oil by Steam Distillation	**mL/100g**	**1.49**	
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	25.3	(% of Total AA)
ICE-3		**% Alpha Acids**	**11.52**	
		Colupulone	51.5	(% of Total BA)
		% Beta Acids	**3.78**	
		a/b ratio	3.05	

Hops-17 Hop Essential Oil by GC-FID (as is)	% area	mg/100g
B-Pinene	NT	NT
Myrcene	NT	NT
Linalool	NT	NT
Caryophyllene	NT	NT
Farnesene	NT	NT
Humulene	NT	NT
Geraniol	NT	NT

NT=NOT TESTED

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist
AAR LAB - ADVANCED ANALYTICAL RESEARCH
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AROMA QUALITY (AQ)

HOP QUALITY REPORT

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		Typical Range	
% Moisture	10.4	8 - 12 %	✓

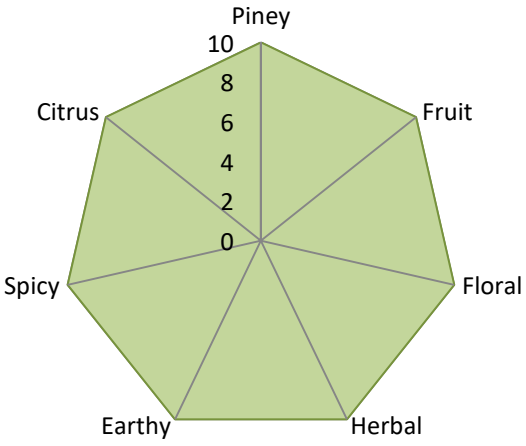
HOP QUALITY (adjusted to 10% moisture)

Total Oil ml/100g	1.49	1.0 - 1.5 mL	✓
cohumulone	25.3	23 - 26%	✓
Alpha Acids	11.57	9.0 - 11.4%	↑
Beta Acids	3.80	3.3 - 4.0%	✓
Myrcene	NT	25.00 - 40.00 %	

AROMA QUALITY (AQ)

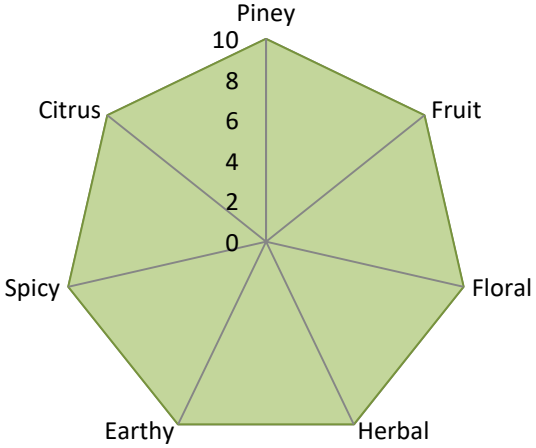
	% Area			mg/mL of Hop Oil			mg/100g of Hops (@10%H20)		
B-Pinene	NT	0.40 - 1.00 %		NT	4 - 10		NT	4 - 15	
Myrcene	NT	25.00 - 40.00 %		NT	250 - 400		NT	250 - 600	
Linalool	NT	0.50 - 1.00 %		NT	5 - 10		NT	5 - 15	
Caryophyllene	NT	8.00 - 10.00 %		NT	80 - 100		NT	80 - 150	
Farnesene	NT	0.01 - 1.00 %		NT	0.1 - 10		NT	0.1 - 15	
Humulene	NT	28.00 - 40.00 %		NT	280 - 400		NT	280 - 600	
Geraniol	NT	0.40 - 1.00 %		NT	4 - 10		NT	4 - 15	

AQ vs VARIETY SPECS



Aroma Intensity= 100

AQ vs ALL HOP VARIETIES



Aroma Intensity= 100

Signed: _____

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