

## HOP QUALITY REPORT CERTIFICATE OF ANALYSIS



To: Fine Bine Farms

Sample ID: 23MAG 1013-01FB

Variety: Magnum

Product: T-90 Pellet

Date : 11/7/2023

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

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	11.5
		% Dry Matter	88.5
AAR	Xanthohumol by HPLC		<b>NT</b> mg/g
Hops-12	Hop Storage Index	HSI	0.324
Hops-13	Essential Oil by Steam Distillation	mL/100g	<b>1.43</b>
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	22.1 (% of Total AA)
ICE-3		<b>% Alpha Acids</b>	<b>15.42</b>
		Colupulone	40.9 (% of Total BA)
		<b>% Beta Acids</b>	<b>6.23</b>
		a/b ratio	2.48
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 : Fine Bine Farms

Sample ID: 23MAG 1013-01FB

Variety: Magnum

Product: T-90 Pellet

Date : 11/7/2023



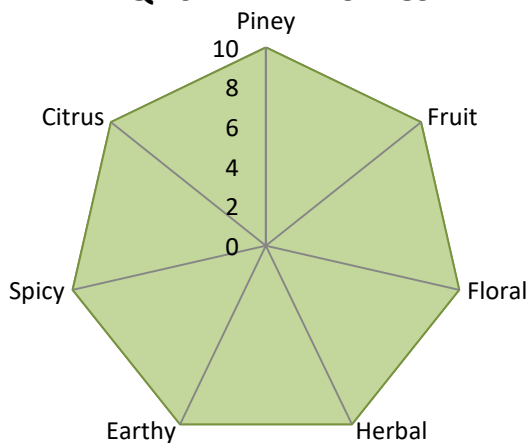
Certifying Officer: Zach Lilla - Lab Manager  
TTB Certified Chemist - Member AOAC - ASBC - BJCP

		Typical Range	
% Moisture	11.5	8 - 12 %	<input checked="" type="checkbox"/>
<b>HOP QUALITY (adjusted to 10% moisture)</b>			
Total Oil ml/100g	1.45	1.0 - 3.0 mL	<input checked="" type="checkbox"/>
cohumulone	22.1	23 - 28%	<input type="checkbox"/> ↓
Alpha Acids	15.67	12 - 15.5%	<input type="checkbox"/> ↑
Beta Acids	6.33	5.5 - 8.0%	<input checked="" type="checkbox"/>
Myrcene	NT	30.00 - 40.00 %	<input type="checkbox"/>

### AROMA QUALITY (AQ)

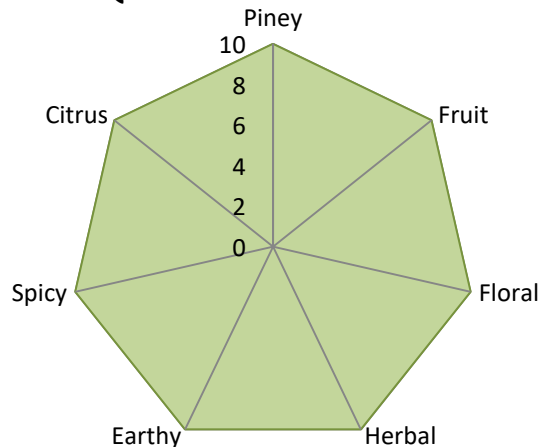
	% Area		mg/mL of Hop Oil		mg/100g of Hops (@10%H2O)	
B-Pinene	NT	0.40 - 0.90 %	NT	4 - 9	NT	4 - 27
Myrcene	NT	30.00 - 40.00 %	NT	300 - 400	NT	300 - 1200
Linalool	NT	0.30 - 0.80 %	NT	3 - 8	NT	3 - 24
Caryophyllene	NT	7.00 - 12.00 %	NT	70 - 120	NT	70 - 360
Farnesene	NT	0.01 - 1.00 %	NT	0.1 - 10	NT	0.1 - 30
Humulene	NT	25.00 - 30.00 %	NT	250 - 300	NT	250 - 900
Geraniol	NT	0.20 - 0.70 %	NT	2 - 7	NT	2 - 21

#### AQ vs VARIETY SPECS



**Aroma Intensity= 100**

#### AQ vs ALL HOP VARIETIES



**Aroma Intensity= 100**

Signed: \_\_\_\_\_

Zachary Lilla - Lab Manager - TTB Certified Chemist

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