

HOP CERTIFICATE OF ANALYSIS



ADVANCED ANALYTICAL RESEARCH

Customer : Hidden Valley Hops - Justin Gloede

Sample ID: 1 Variety: Cluster
(Pre-Harvest)

Certifying Officer: Zach Lilla - Lab Manager

Date : 8/22/2019

Method				
Hops-4C	Moisture Analysis	% Moisture	79.9	
		% Dry Matter	20.1	
Hops-6A	Alpha & Beta Acids by SPEC	% Alpha	NT	(as is)
		%Beta	NT	(as is)
		a/b ratio	NT	
Hops-12	Hop Storage Index	HSI	0.228	
Hops-13	Total Essential Oil	mL/100g	NT	(as is)
Hops-14	Alpha & Beta Acids by HPLC	Cohumulone	30.3	(% of Total AA)
	ICE-3	Total % Alpha Acids	0.98	(as is)
		Colupulone	57.1	(% of Total BA)
		Total % Beta Acids	1.13	(as is)
		a/b ratio	0.86	
Hops-17	Hop Essential Oil by GC-FID as a % of total oil	B-Pinene	NT	
		Myrcene	NT	
		Linalool	NT	
		Caryophyllene	NT	
		Farnesene	NT	
		Humulene	NT	
		Geraniol	NT	

NT=NOT TESTED

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Note: Target ranges are only a general guideline, they may differ based on regional differences.

Cluster	Typical Ranges
% Alpha	6 - 9%
% Beta	4 - 6%
Cohumulone	36 - 41%
Total Oil	0.5 - 1 mL

Note: With fresh wet hops, due to variations in handling, values corrected for moisture are no indication of a dried post processed A/B or oil content.

Calculations (Brewing Values @ 10% moisture)

	SPEC	HPLC
% Alpha	NT	4.36
% Beta	NT	5.05
Cohumulone		30.3
Total Oil	NT	mL/100g

Signed: _____

Zachary Lilla - Lab Manager