



# YAKIMA CHIEF HOPS™

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YAKIMA CHIEF HOPS LLC

## Certificate of Analysis

**Supplier:** Yakima Chief Hops LLC  
306 Division Street  
Yakima, WA 98902

**Date of Issue:** 13-Feb-2019

**Product Name:** American Noble Hops™ Pellets

**Lot Number:** BP1-CBULOR3329  
**Variety:** Loral®  
**Crop Year:** 2018  
**Production Date:** February 2019  
**Best Use Before Date:** February 2022

<u>Characteristic</u>	<u>Typical Analysis</u>	<u>Actual Analysis</u>
<b>Alpha Acids:</b>	2.5 - 17.5% (w/w) UV Spectro by ASBC HOPS - 6A	3.0%
<b>Beta Acids:</b>	3.0 - 9.0% (w/w) UV Spectro by ASBC HOPS - 6A	1.7%
<b>Hop Storage Index:</b>	Varies by Variety and Time from Harvest Hop Storage Index by ASBC Hops - 12	0.294
<b>Oil by Distillation:</b>	Varies by Variety ASBC Hops - 13 (%v/w)	0.6%
<b>Oil Profile by GC, EBC Analytica V 7.12:</b>	<b>B-Pinene:</b> 0.7 %	<b>Farnesene:</b> 0.1 %
	<b>Myrcene:</b> 48.1 %	<b>Humulene:</b> 15.0 %
	<b>Linalool:</b> 0.5 %	<b>Geraniol:</b> 0.8 %
	<b>Caryophyllene:</b> 6.8 %	

<b>Lead:</b>	< 1.0 ppm	passes test
<b>Arsenic:</b>	< 0.5 ppm	passes test
<b>Cadmium:</b>	< 0.03 ppm	passes test
<b>Total Heavy Metals:</b>	< 10 ppm (asPb)	passes test

Missy Raver  
Quality Control Manager