



Indie Hops
OREGON GROWN

In Hop Pursuit
Blog

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Selected Publically and Privately Owned Hop Varieties Chemistry Chart

Name	Acc.Nr	Yield	% alpha	% beta	% Co-H	Storage	oil ml/100g	Myrc	Hum	Caryo	Farn	H/C ratio	Remarks
Centennial	21507	good	10 to 13	4 to 5	25-31	fair	2.5	60	9	4	trace	2.0	alpha/aroma
Chinook	21226	v. good	13 to 15	3 to 5	31-36	good	1.8	52	12	7	trace	2.1	high alpha
Columbia	21040	good	8 to 11	3 to 6	36-40	good	1.2	55	17	7	4	2.3	Fuggie aroma
Santiam	21664	good	5 to 8	6 to 7	18-22	fair	1.5	45	20	7	12	3.3	Tettnang aroma
Sterling	21689	v.good	8 to 10	4 to 5	22-24	fair	1.5	48	18	5	15	3.4	Saaz aroma
US Tet/Fuggie	48209	poor	5 to 6	2 to 3	26-28	good	0.9	46	25	8	4	3.0	Fuggie aroma
Crystal	21490	good	4 to 6	5 to 7	21-24	fair	1.4	58	20	6	trace	3.6	Hallertau aroma
EK Golding	21680	poor	5 to 6	2 to 3	28-29	fair	0.9	42	27	9	trace	3.0	aroma
Horizon	21373	fair	12 to 14	5 to 7	18-22	good	1.9	71	7	5	2	1.5	alpha/aroma
Liberty	21457	good	5 to 7	3 to 4	22-24	fair	1.3	46	29	9	trace	3.4	Hallertau aroma
Mt.Hood	21455	good	6 to 8	5 to 7	22-25	fair	1.7	47	26	11	trace	2.4	Hallertau aroma
Mt.Rainier	21740	good	8 to 10	6 to 8	21-24	good	0.9	62	17	5	trace	3.4	alpha/aroma
Perle	21227	good	9 to 11	4 to 5	26-29	good	1.0	44	28	10	trace	2.9	alpha/aroma
Willamette	21041	good	6 to 7	4 to 5	29-32	fair	1.2	51	21	7	5	2.9	Fuggie aroma
Magnum	21670	v.good	15 to 17	6 to 7	26-28	good	2.3	65	15	4	trace	3.5	high alpha
Ahtanum *	private	v.good	5 to 7	5 to 7	30-35	fair	1.1	55	18	10	trace	1.5	aroma
Amarillo *	private	good	8 to 11	6 to 7	21-24	fair	1.7	68	10	4	4	2.3	aroma
Citra *	private	good	10 to 12										new aroma
CTZ *	private	v.good	14 to 16	4 to 6	30-35	poor	1.8	45	20	10	trace	2.0	high alpha
Simcoe *	private	v.good	12 to 14	4 to 5	15-20	good	2.2	62	15	7	trace	2.1	high alpha
Warrior *	private	v.good	15 to 17	4 to 6	25	good	1.5	50	18	10	trace	1.8	high alpha

* patented

• History- discovery
+ vs growth / england
• Noble Hops
• Alpha/Beta Acids
Low COH-
cleaner bitterness

Odor Compounds in Cascade and Willamette Hops

Compound Name	Odor Description	Average Concentration (mg/100 g hops)
Methyl-1 butyl acetate	Estery, fruity, banana, pear, sweet	0.05
Ethyl 2 methyl butyrate	Sweet, green, fruity, apple	0.17
Isobutyl isobutyrate	Strong, fresh, fruity, apple, banana	0.34
Nerol	Rose	0.35
Citronellal	Citrus, green, fruity, rose	0.36
p-cymene	Fresh citrus terpene woody spicy	0.76
B ionone	Violets	0.94
a-pinene	Pine	1.40
Geraniol	Sweet flowery	1.56
Hexanal	Green grass, hay	1.59
Epoxide	Spicy	2.51
Unknown7	???	2.97
Limonene	Citric, terpenic, orange	3.03
Unknown5	???	3.24
Citral	Sweet citrus	3.57
Eudesmol	Spicy	3.88
Unknown	???	4.13
Farnesol	Spicy	4.69
Unknown6	???	4.86
G. Acetate	Geranium, floral sweet citrus	6.94
Linalool	Floral/orange	7.61
Unknown4	???	8.53
isovaleric acid	Cheesy, rancid	9.08
Unknown3	???	10.01
Caryophyllene Oxide	Spicy	11.12
Methyl heptonoate	Sweet, fruity, peach, apricot, green, berry	11.13
Citronellol	Floral, rose, citrus, green	11.22
b-pinene	Sharp terpene like pine, coniferous pine	11.58
Unknown2	???	11.71
Epoxide2	Spicy	21.34
Farnesene	Green, woody, weedy, herbal, lifting, pine and gin	85.24
Caryophyllene	Woody (woody:cedarwood, sandalwood, curry)	112.97
A-terpineol/Humulene	Piney/woody	296.98
Myrcene	Green, balsamic and slightly metallic aroma	698.70



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AMARILLO®(VGXP01)



Pedigree

Privately grown and registered

Brewing Usage

Aroma

Aroma

Floral, tropical, and citrus (lemon, orange and grapefruit) characteristics

Possible Substitutions

- Cascade (/cascade/)
- Centennial (/centennial/)
- Simcoe® (/simcoe-brand-ycr-14-cv/)

Typical Beer Styles

- IPA

Additional Information

Limited acreage and availability.

Storage Stability

Good

Alpha Acids

8.0 - 11.0%

Co-Humulone

21 - 24%

Myrcene

68 - 70% of total oil

Caryophyllene

2 - 4% of total oil

General Trade Perception

Viewed as a Cascade type

Beta Acids

6.0 - 7.0%

Total Oil

1.5 - 1.9 mL / 100g

Humulene

9 - 11% of total oil

Farnesene

2 - 4% of total oil

Previous: Ahtanum™ (/ahtanum-brand-ycr-1cv/)

Next: Bitter Gold (/bitter-gold/)



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Next: Ultra (/ultra/)



(<https://www.alphaanalyticstesting.com>)

Hops Class

Resistor Pale Ale



SEE WHAT YOU CAN BREW

Ingredients

Grains & Extract

.15 lbs. Briess Caramel Malt 20l
.15 lbs. Carapils malt
1.5 lbs. Golden Light Liquid malt extract

Hops

(30 Minute Boil)

.33 oz. Hop	?% AA	30 min.
.33 oz. Hop	?% AA	10 min.
.33 oz. Hop	?% AA	DH 5 days

Yeast

Safale US-05 Dry Ale Yeast

1

Gallon

Color:
6 SRM

Bitterness:
varies

OG:
1.052

FG:
1.010

Alcohol
5.1 % / Vol

Brew Date 12/13/13

Bottle Date 12/26/13

Notes: 30 seconds o2 before pitching yeast

www.bitterandesters.com

Process

1. Heat 1 gallons of water to 165 °F.
2. Measure & Crush specialty grains, add to grain bag and steep in 1 gallon of 165 °F water for 30 minutes.
3. After 30 minutes take grain bag out of brew pot and let drain.
4. Add water to bring total liquid to 1.5 gallons, bring wort to a boil.
5. Once wort is boiling add Malt Extract. Stir and bring back to a boil.
6. (Counting down from 30 minutes after the start of boil)
7. 60 Minutes Add .33 oz. Hops
8. 10 Minutes - .33 oz. Hops.
9. After 30 minute Boil turn off heat and cool to 70 °F.
10. Ferment 9 days, add .33 oz hops to fermenter.
11. Bottle with 1 carbonation drop per 12 oz bottle 5 days later.

Some flavors and aromas to look for from hops.

bitter, melon, citric, passionfruit, dill, pear, pine, earthy, grapefruit
fruity, musty, spicy, sharp, bright, fresh, herbal, zippy, lemony,
newly-mown lawn, aromatic, floral, springlike, brilliant,
sprucelike, juniper-like, minty, pungent, elegant, grassy.



HOPS

tasting notes

1		HORIZON
IBU	46	Aroma
Alpha	10.2%	(citrus, berry)
Beta	6.2%	Bitterness
Total Oil	1.5-2 mls/100g	Low
Cohumulone	16-19%	Flavor
		berry → citrus

2		CHINOOK
IBU	52	Aroma
Alpha	11.6%	Resiny, "cat pee", floral, grapefruit peel
Beta	3.4%	Bitterness
Total Oil	1-2.5 mls/100g	mod to high
Cohumulone	29-34%	Flavor
		stone fruit mixed w/ floral

3		TETTNANG
IBU	28	Aroma
Alpha	6.1%	Floral, spice, earthy
Beta	3.7%	Bitterness
Total Oil	.4-.8 mls/100g	med.
Cohumulone	20-25%	Flavor
		Big ^{sweet} floral, touch of citrus,

4		NORTHERN BREWER
IBU	45	Aroma
Alpha	9.9%	Base beer, touch of spice
Beta	4.9%	Bitterness
Total Oil	.4-.8 mls/100g	low
Cohumulone	20-25%	Flavor
		neutral, spice in finish

5		AMARILLO
IBU	40	Aroma
Alpha	8.8%	Lemon, resin, orange
Beta	6.2%	Bitterness
Total Oil	1.5-1.9 ml/100g	med to high, some dry
Cohumulone	21-24%	Flavor
		citrus, floral

6		GALAXY - AU
IBU	68	Aroma
Alpha	15%	Tropical fruit - grapefruit, mango
Beta	5.9%	Bitterness
Total Oil	2.4-2.7 ml/100g	clean & high
Cohumulone	~35%	Flavor
		Trop fruit, mango / peach / grapefruit

7		SUMMER - AU
IBU	25	Aroma
Alpha	5.5%	floral, neutral in aroma.
Beta	5.0%	Bitterness
Total Oil	1.4-2.0 ml/100g	med.
Cohumulone	20-25%	Flavor
		floral & spice in taste - similar to lemongrass.

8		MOSAIC
IBU	52	Aroma
Alpha	11.6%	From MOSAIC Hops
Beta	3.4%	citrus + "cat pee"
Total Oil	1-1.5%	Bitterness
Cohumulone	24-26%	med.
		Flavor
		orange, floral (like chamomile), lemon