

TABLE OF

CONTENTS

ADMIRAL
AHTANUM® BRAND
AMARILLO® BRAND
ARAMIS
AURORA
AZACCA® BRAND
BITTER GOLD
BOADICEA
BOBEK
BOUCLIER
BRAMLING CROSS
BRAVO™ BRAND
BREWER'S GOLD (US)
BREWER'S GOLD (GR)
BROOKLYN
BULLION
CASCADE
CASHMERE
CELEIA
CENTENNIAL
CHALLENGER
CHELAN
CHINOOK
CITRA® BRAND CLUSTER
COLUMBIA
COLUMBUS
COMET
CRYSTAL
DANA
DR. RUDI™ BRAND EAST
KENT GOLDING EKUANOT®
BRAND
EL DORADO® BRAND
ELLA™ BRAND
ENDEAVOUR
ENIGMA™ BRAND
EPIC
EROICA
FALCONER'S FLIGHT®
FALCONER'S FLIGHT 7CS®
FIRST GOLD
FUGGLE (US)
FUGGLE (UK)
GALAXY™ BRAND
GALENA
GLACIER
GOLDING
GREEN BULLET

HALLERTAU (US)
HALLERTAU BLANC (GR)
HELGA™ BRAND
HERALD
HERKULES
HERSBRUCKER
HORIZON
HUELL MELON
IDAHO 7™ BRAND
INDEPENDENCE
JARRYLO® BRAND
KAZBEK
KOHATU® BRAND
LIBERTY
LORAL® BRAND
MAGNUM (US)
MAGNUM (GR)
MANDARINA BAVARIA
MERKUR
MILLENNIUM
MITTELFRÜH
MOSAIC® BRAND
MOTUEKA™ BRAND
MT. HOOD
MT. RAINIER
NELSON SAUVIN™ BRAND
NEWPORT
NORTHDOWN
NORTHERN BREWER (US)
NORTHERN BREWER (GR)
NUGGET
OLYMPIC
OPAL
ORION
PACIFIC CREST
PACIFIC GEM
PACIFIC JADE™ BRAND
PACIFICA™ BRAND
PAHTO™ BRAND
PALISADE® BRAND
PEKKO® BRAND
PERLE (US)
PERLE (GR)
PHOENIX
PILGRIM
PILOT
PIONEER
POLARIS
PREMIANT

PRIDE OF RINGWOOD
PROGRESS
RAKAU™ BRAND
RIWAKA™ BRAND
SAAZ (US)
SAAZ (CZ)
SABRO™ BRAND
SANTIAM
SAPHIR
SAVINJSKI GOLDING
SELECT
SIMCOE® BRAND
SLÁDEK
SMARAGD
SORACHI ACE
SOUTHERN CROSS
SOVEREIGN
SPALT
STERLING
STICKLEBRACK
STRISSELSPALT
SUMMER™ BRAND
SUMMIT™ BRAND
SUPER PRIDE
SUSSEX
SYLVA™ BRAND
TAHOMA
TARGET
TAURUS
TETTANG (US)
TETTANG (GR)
TOMAHAWK® BRAND
TOPAZ™ BRAND
TRADITION
TRIPLEPEARL
TRISKEL
ULTRA
VANGUARD
VIC SECRET™ BRAND
WAI-ITI™ BRAND
WAIMEA™ BRAND
WAKATU™ BRAND
WARRIOR® BRAND
WHITBREAD GOLDING
WILLAMETTE
YAKIMA GOLD
ZEUS
ZYTHOS®



ADMIRAL



Bred at Wye College and released in 1998, Admiral is a cross between Challenger and Northdown and was designed to be a complement to Target. Its mild aroma characteristics make it suitable for late-hopping and dry hopping applications in combination with other varieties.

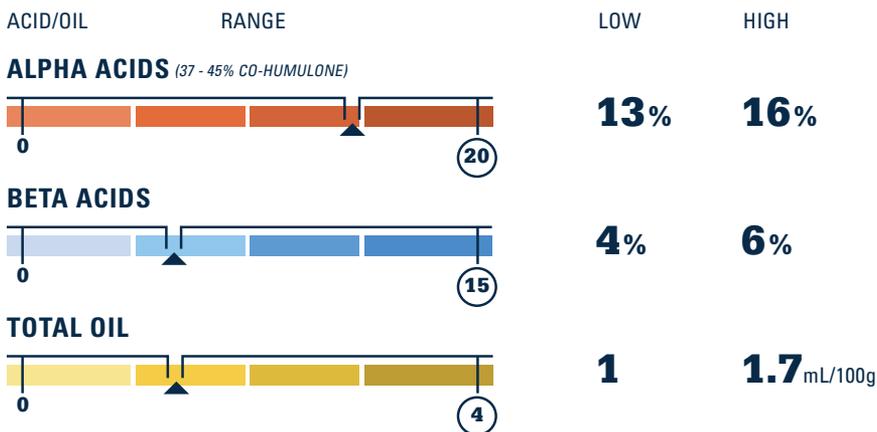
COUNTRY
**UNITED
KINGDOM**

AROMA PROFILE
ORANGE • TEA • FRESH • SAP

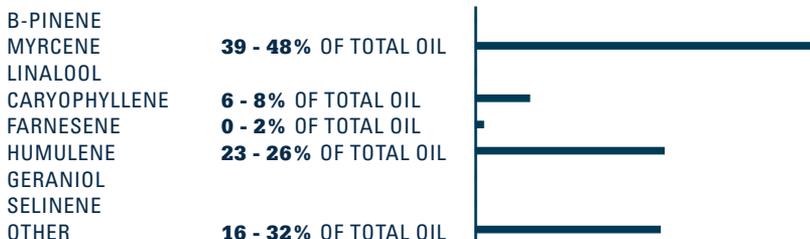
BEER STYLES

**ENGLISH-STYLE ALE • ENGLISH-STYLE BITTER • PALE ALE
IPA • WEISSE**

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

AHTANUM[®] BRAND



YCR 1 CV

Bred by Yakima Chief Ranches, Ahtanum[®] YCR 1 cv. is an aroma-type cultivar used for its aromatic properties and moderate bittering. The variety is named after the location where Charles Carpenter established the first hop farm east of the Cascade Mountains in Washington State in 1869.

COUNTRY
UNITED STATES

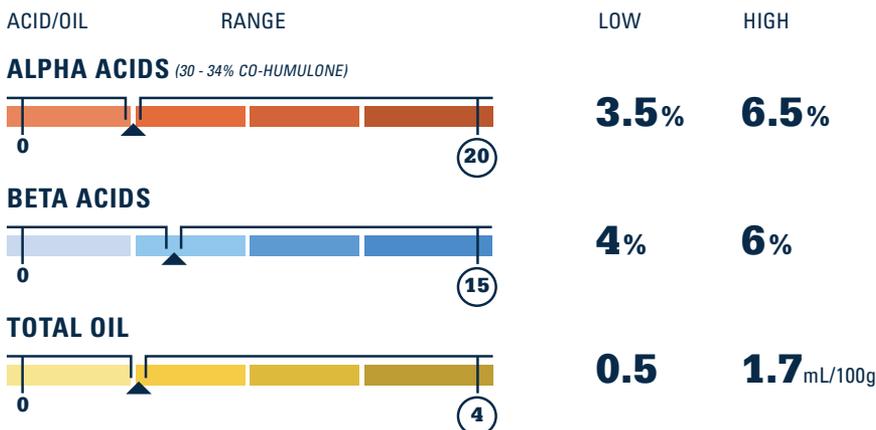
AROMA PROFILE
GRAPEFRUIT • FLORAL CEDAR



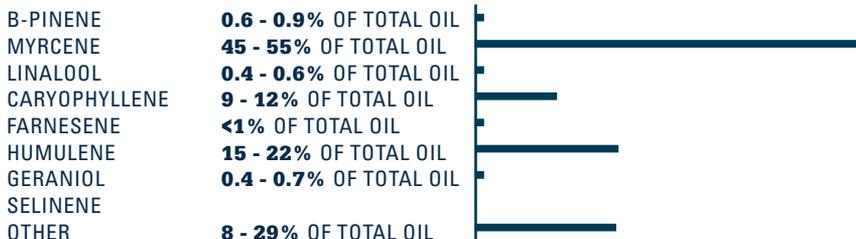
BEER STYLES

LAGER • IPA • PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS[™]

AMARILLO® BRAND



VGXP01 CV

Discovered by Virgil Gamache Farms, Amarillo® is one of the top ten aroma varieties utilized by craft brewers. It features relatively high alpha acids along with extremely high levels of myrcene for citrus and grapefruit flavors.

COUNTRY

UNITED STATES

AROMA PROFILE

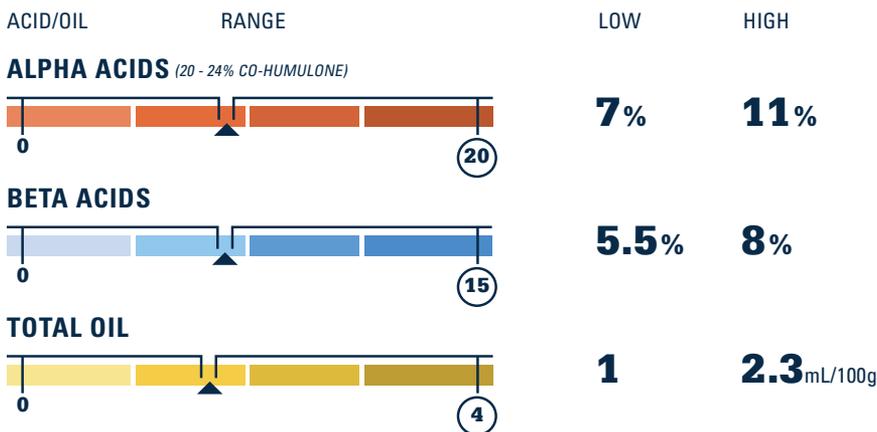
**GRAPEFRUIT • ORANGE
LEMON • MELON • APRICOT
PEACH**



BEER STYLES

AMERICAN-STYLE ALE • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.4 - 0.8% OF TOTAL OIL	
MYRCENE	40 - 50% OF TOTAL OIL	
LINALOOL	0.5 - 0.8% OF TOTAL OIL	
CARYOPHYLLENE	7 - 10% OF TOTAL OIL	
FARNESENE	6 - 9% OF TOTAL OIL	
HUMULENE	19 - 24% OF TOTAL OIL	
GERANIOL	0.1 - 0.3% OF TOTAL OIL	
SELINENE		
OTHER	5 - 27% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

ARAMIS



Developed in 2002 as a cross between French Strisselspalt and UK WGV, Aramis is an aroma variety with sweet and spicy characteristics. It resembles Strisselspalt, but contains higher oil and alpha content.

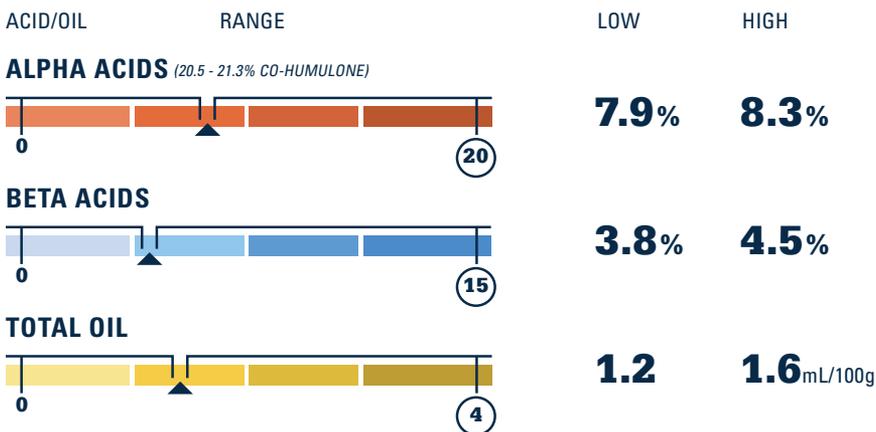
COUNTRY
FRANCE

AROMA PROFILE
GREEN • HERBAL • SPICY • CITRUS

BEER STYLES

**TRAPPIST/BELGIAN-STYLE ALE • BIÈRE DE SAISON • PALE ALE
PORTER**

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	40% OF TOTAL OIL
MYRCENE	
LINALOOL	7.4% OF TOTAL OIL
CARYOPHYLLENE	2 - 4% OF TOTAL OIL
FARNESENE	21% OF TOTAL OIL
HUMULENE	
GERANIOL	
SELINENE	
OTHER	28.6% OF TOTAL OIL



AURORA



A diploid hybrid of Northern Brewer and a TG seedling of unknown origin, Aurora displays an intense yet pleasant aroma in finished beers. It is also known as Super Styrian.

COUNTRY

SLOVENIA

AROMA PROFILE

NOBLE

BEER STYLES

ENGLISH OR BELGIAN-STYLE ALE

BREWING VALUES

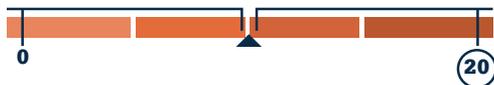
ACID/OIL

RANGE

LOW

HIGH

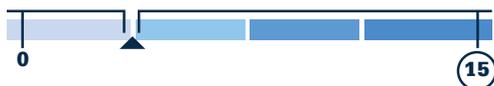
ALPHA ACIDS (20 - 26% CO-HUMULONE)



7%

13%

BETA ACIDS



2.7%

4.4%

TOTAL OIL



0.9

1.6 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

20 - 25% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

6 - 9% OF TOTAL OIL

FARNESENE

5 - 10% OF TOTAL OIL

HUMULENE

20 - 25% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

31 - 49% OF TOTAL OIL



YAKIMA CHIEF HOPS™

AZACCA® BRAND



ADHA 483

Azacca®, named for the Haitian god of agriculture, is a hop big in citrus and tropical fruit tones. It's excellent aromatic qualities have quickly made Azacca® a go-to hop for late and dry hop additions in varying styles of beer.

COUNTRY

UNITED STATES

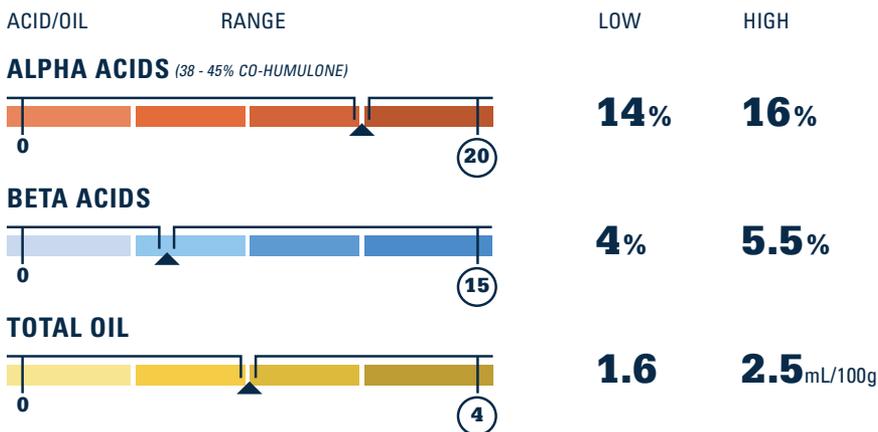
AROMA PROFILE

**MANGO • PAPAYA • ORANGE • GRAPEFRUIT
LEMON • PINEY • SPICY • PINEAPPLE • GRASSY
TROPICAL FRUIT • CITRUS**

BEER STYLES

AMERICAN-STYLE ALE • IPA • SAISON

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	46 - 55% OF TOTAL OIL
MYRCENE	
LINALOOL	
CARYOPHYLLENE	8 - 12% OF TOTAL OIL
FARNESENE	0 - 1% OF TOTAL OIL
HUMULENE	14 - 18% OF TOTAL OIL
GERANIOL	
SELINENE	
OTHER	14 - 32% OF TOTAL OIL



YAKIMA CHIEF HOPS™

BITTER GOLD



Released in 1999, Bitter Gold is a high alpha variety with excellent aroma capabilities. Its lineage includes Brewer's Gold, Bullion, Comet and Fuggle. Bitter Gold offers limited aroma when used as a bittering hop but delivers diverse stone and tropical fruit flavors in later additions.

COUNTRY

UNITED STATES

AROMA PROFILE

**PEAR • WATERMELON
STONE FRUIT • FRESH CUT GRASS**



BEER STYLES

BELGIAN-STYLE ALE • PALE ALE • IPA

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

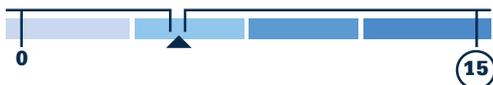
ALPHA ACIDS



12%

14.5%

BETA ACIDS



4.5%

6%

TOTAL OIL



1

2 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 0.9% OF TOTAL OIL
MYRCENE	45 - 55% OF TOTAL OIL
LINALOOL	0.4 - 0.7% OF TOTAL OIL
CARYOPHYLLENE	7 - 11% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	10 - 18% OF TOTAL OIL
GERANIOL	0.1 - 0.3% OF TOTAL OIL
SELINENE	
OTHER	13 - 36% OF TOTAL OIL



YAKIMA CHIEF HOPS™

BOADICEA



Bred at Wye College and released in 2004, Boadicea is a dwarf variety derived from open pollination of a second-generation wild, Japanese female hop. Its aroma is very mild with subtle grass, floral and fruit characteristics.

COUNTRY

UNITED KINGDOM

AROMA PROFILE

FLORAL • ORCHARD BLOSSOM • RIPE FRUIT

BEER STYLES

PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (23 - 29% CO-HUMULONE)



7.5%

10%

BETA ACIDS



3.2%

4.2%

TOTAL OIL



1.4

2.2 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

30 - 40% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

15 - 19% OF TOTAL OIL

FARNESENE

0 - 5% OF TOTAL OIL

HUMULENE

20% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

16 - 35% OF TOTAL OIL



YAKIMA CHIEF HOPS™

BOBEK



A diploid hybrid of Northern Brewer and a TG seedling of unknown origin, Bobek displays an intense yet pleasant aroma in finished beers.

COUNTRY

SLOVENIA

AROMA PROFILE

NOBLE

BEER STYLES

ENGLISH-STYLE ALE • LAGER • PILSNER

ENGLISH-STYLE BITTER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

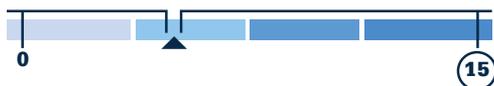
ALPHA ACIDS (27 - 31% CO-HUMULONE)



3.5%

7.8%

BETA ACIDS



4%

6.1%

TOTAL OIL



0.7

4_{mL}/100g

TOTAL OIL BREAKDOWN

B-PINENE

30 - 45% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

4 - 6% OF TOTAL OIL

FARNESENE

4 - 7% OF TOTAL OIL

HUMULENE

13 - 19% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

23 - 49% OF TOTAL OIL



YAKIMA CHIEF HOPS™

BOUCLIER



Developed in 2005 as a cross between Strisselspalt and a UK male, Bouclier is the most recent release from the French varietal research program. Its UK lineage includes Wye Challenger, Early Bird Golding and Northern Brewer. Bouclier's combination of French and English aromas allows it to bring a French touch to English-style beers.

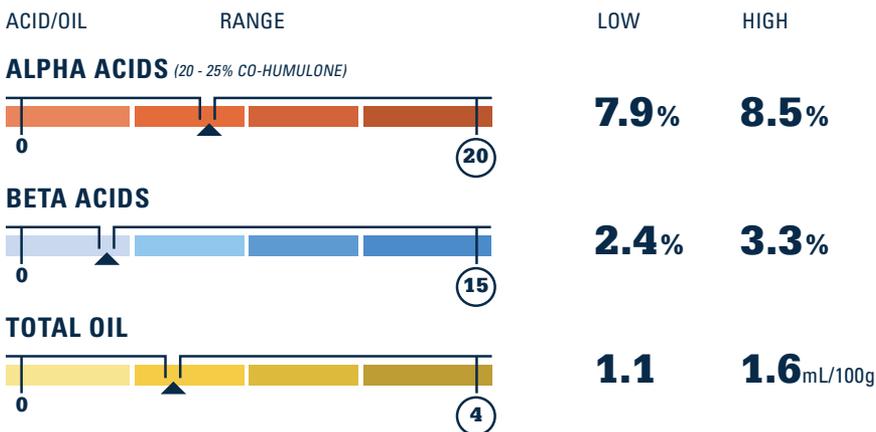
COUNTRY
FRANCE

AROMA PROFILE
HERBAL • GRASS • SPICY

BEER STYLES

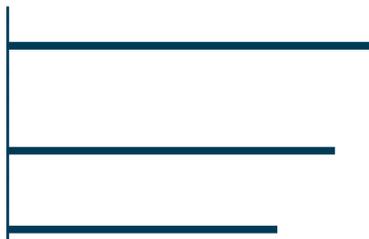
SAISON • STOUT • PILSNER • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	38% OF TOTAL OIL
MYRCENE	
LINALOOL	
CARYOPHYLLENE	
FARNESENE	
HUMULENE	34% OF TOTAL OIL
GERANIOL	
SELINENE	
OTHER	28% OF TOTAL OIL



YAKIMA CHIEF HOPS™

BRAMLING CROSS



Bred at Wye College in 1927, Bramling Cross is a cross between Bramling (a traditional Golding variety) and a male seedling of the Manitoban wild hop. It is often used in traditional cask conditioned beers due to its distinct characteristics.

COUNTRY

UNITED KINGDOM

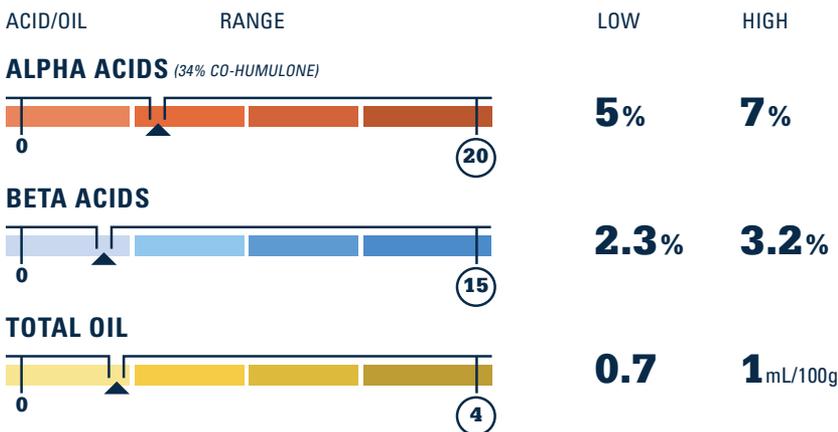
AROMA PROFILE

BLACKCURRANT • LOGANBERRY • VANILLA

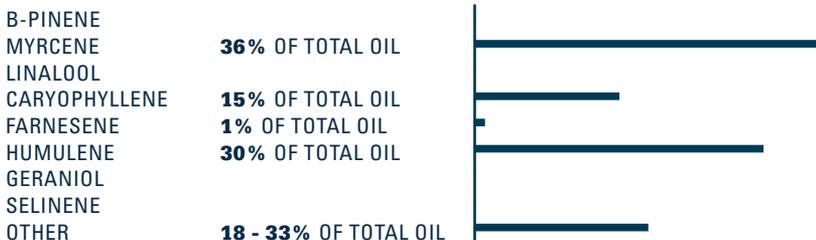
BEER STYLES

ENGLISH-STYLE BITTER • BROWN ALE • PORTER • BLACK ALE DUNKEL

BREWING VALUES



TOTAL OIL BREAKDOWN



BRAVO™ BRAND



HOPSTEINER 01046

Developed by Hopsteiner Breeding Program and released in 2006, Bravo™ is a second generation super-alpha variety. It is an excellent bittering variety and can provide pleasant fruit and sweet floral aroma characteristics in some applications.

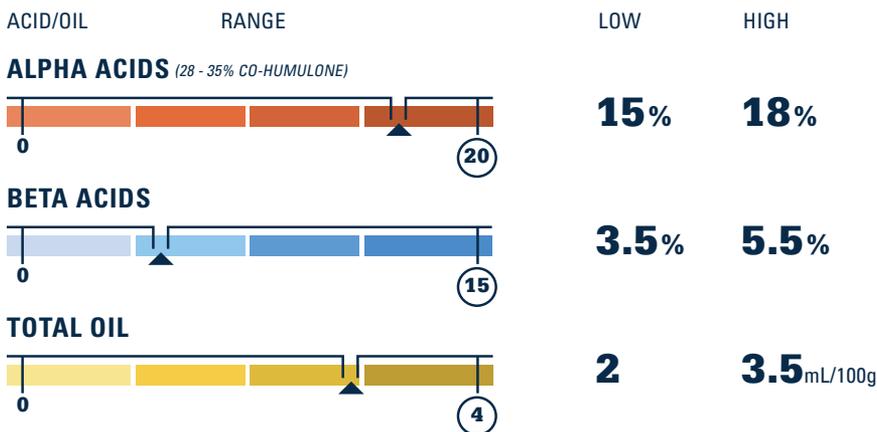
COUNTRY
UNITED STATES

AROMA PROFILE
ORANGE • VANILLA



BEER STYLES
PALE ALE • IPA • BARLEY WINE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.8 - 1% OF TOTAL OIL	
MYRCENE	55 - 60% OF TOTAL OIL	
LINALOOL	0.4 - 0.6% OF TOTAL OIL	
CARYOPHYLLENE	6 - 8% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	8 - 11% OF TOTAL OIL	
GERANIOL	0.7 - 0.9% OF TOTAL OIL	
SELINENE		
OTHER	18 - 28% OF TOTAL OIL	



BREWER'S GOLD



Bred at Wye College in 1919, Brewer's Gold is an ancestor to many major high alpha hops including Sterling, Galena, Horizon, Centennial and Nugget. It is an English variety, however American-grown Brewer's Gold contains higher levels of alpha acids than its English counterpart.

COUNTRY
UNITED STATES

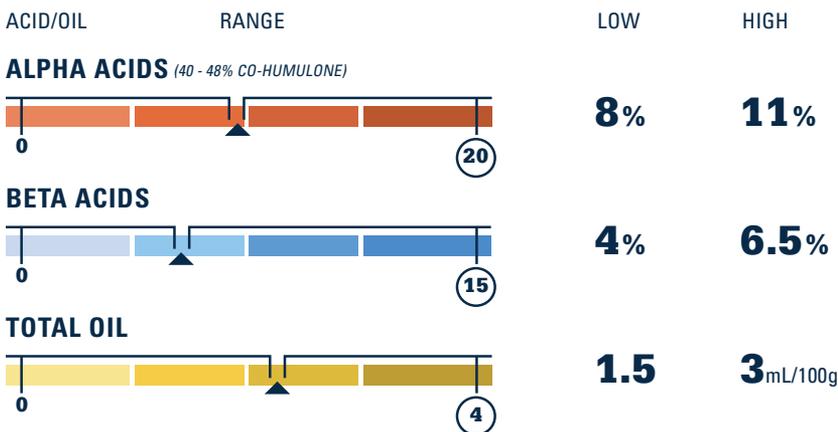
AROMA PROFILE
BLACKCURRANT • SPICY



BEER STYLES

**ENGLISH-STYLE ALE • BELGIAN-STYLE ALE
GERMAN-STYLE ALE**

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 0.9% OF TOTAL OIL	
MYRCENE	45 - 60% OF TOTAL OIL	
LINALOOL	0.5 - 0.8% OF TOTAL OIL	
CARYOPHYLLENE	8 - 12% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	12 - 18% OF TOTAL OIL	
GERANIOL	1 - 1.8% OF TOTAL OIL	
SELINENE		
OTHER	6 - 32% OF TOTAL OIL	



BREWER'S GOLD



Bred circa 1917 and first produced in 1919, Brewer's Gold is one of the first varieties to emerge from a UK breeding program by professor E.S. Salmon. It is an open pollinated seedling of a wild Manitoba hop. Brewer's Gold has a high resin content and provides well-balanced bitterness which is ideally complemented by late hop additions in lager beers.

COUNTRY

GERMANY

AROMA PROFILE

BLACKCURRANT • SPICY

BEER STYLES

**ENGLISH-STYLE ALE • BELGIAN-STYLE ALE
GERMAN-STYLE ALE**

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

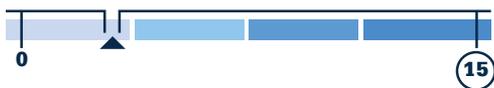
ALPHA ACIDS (40 - 48% CO-HUMULONE)



4.5%

6.5%

BETA ACIDS



2.5%

3.5%

TOTAL OIL



0.8

1.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

40 - 50% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

7 - 8% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

29 - 31% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

10 - 23% OF TOTAL OIL



YAKIMA CHIEF HOPS

BROOKLYN



Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2015, Brooklyn is a triploid variety from New Zealand Southern Cross and a selected New Zealand male. It is a big hop with high alpha acid content, however, sensory panels have also indicated the presence of grapefruit, tropical fruit and passionfruit characteristics.

COUNTRY

NEW ZEALAND

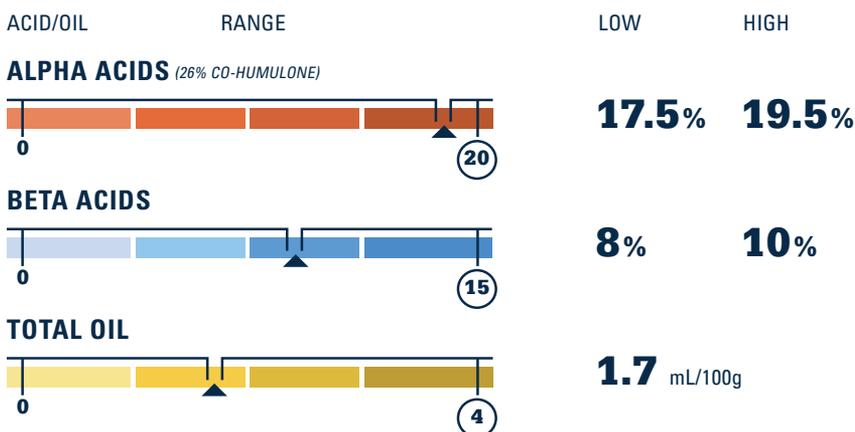
AROMA PROFILE

**GRAPEFRUIT • PASSIONFRUIT • SPICE
SWEET HAY**

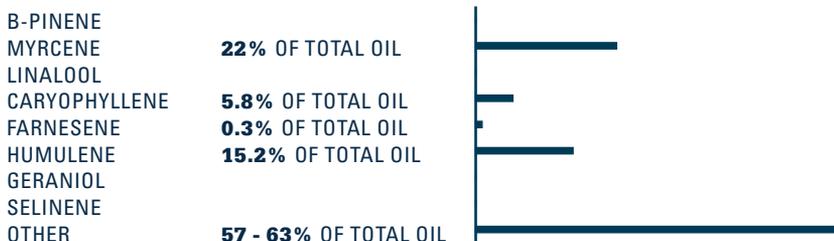
BEER STYLES

IPA • DOUBLE IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

BULLION



Recognized as one of the first super-alpha varieties, Bullion is a cross between Wild Manitoba BB1 and an English male hop. It was a major variety throughout the mid-1940s, however commercial production ceased in 1985 due to newer varieties with higher alpha acid content and better storage stability.

COUNTRY
UNITED STATES

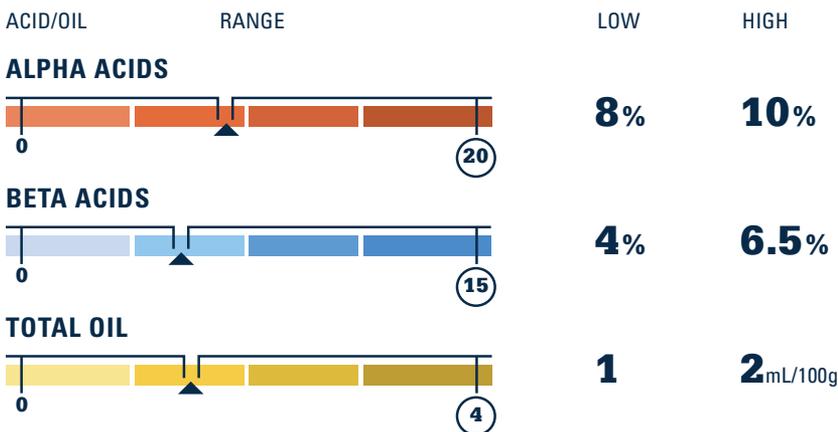
AROMA PROFILE
BLACKCURRANT • ZESTY



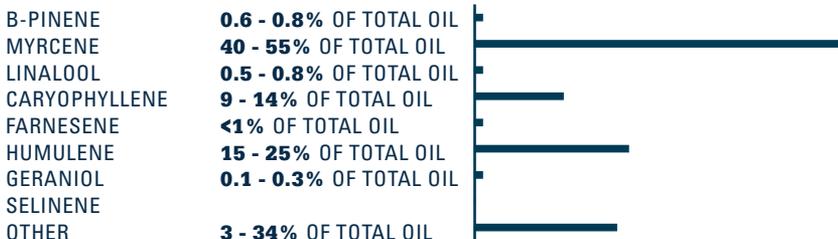
BEER STYLES

STOUT • PORTER • DARK LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN



CASCADE



Originating from the USDA-ARA breeding program, Cascade is an aroma-type cultivar bred in 1956 and released in 1972. It was developed by open pollination of a Fuggle seedling. Cascade is the most popular variety in craft brewing and is known for having a unique floral, spicy and citrus character with balanced bittering potential.

COUNTRY
UNITED STATES

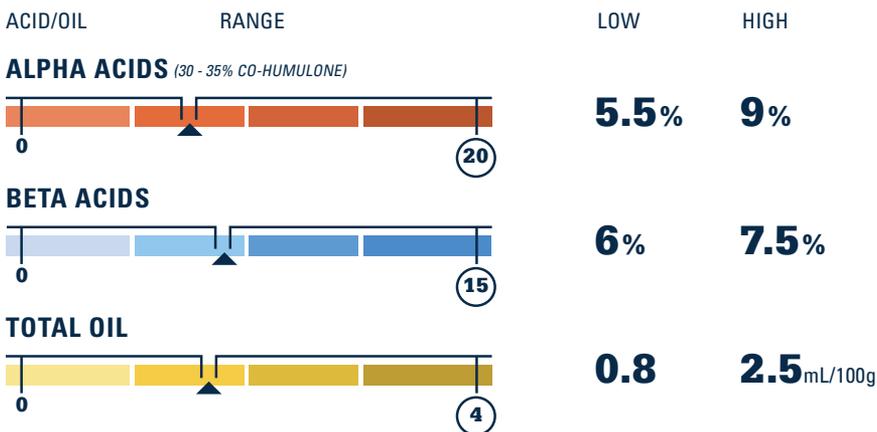
AROMA PROFILE
GRAPEFRUIT • FLORAL • PINE



BEER STYLES

AMERICAN PALE ALE • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.5 - 0.8% OF TOTAL OIL	
MYRCENE	45 - 60% OF TOTAL OIL	
LINALOOL	0.3 - 0.6% OF TOTAL OIL	
CARYOPHYLLENE	5 - 9% OF TOTAL OIL	
FARNESENE	6 - 9% OF TOTAL OIL	
HUMULENE	14 - 20% OF TOTAL OIL	
GERANIOL	0.2 - 0.4% OF TOTAL OIL	
SELINENE		
OTHER	0 - 29% OF TOTAL OIL	



CASHMERE



Released by Washington State University in 2013, Cashmere is a daughter of Cascade, containing Northern Brewer germplasm through the male parent. It contains higher alpha acid content than Cascade and twice as much humulene providing smooth bitterness and a mild citrus fruit aroma.

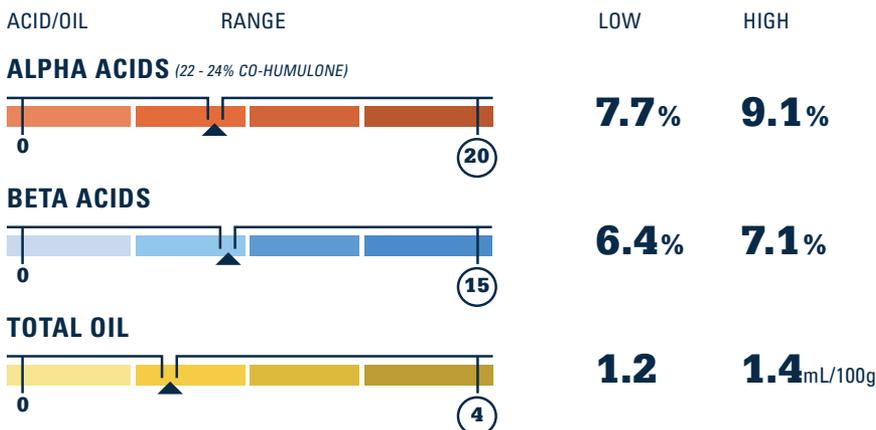
COUNTRY
UNITED STATES

AROMA PROFILE
MELON • LEMON • LIME SPICE

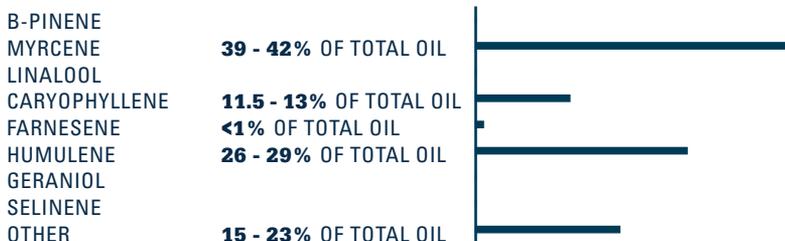


BEER STYLES
IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



CELEIA



A hybrid of Styrian Golding, Aurora and a Slovenia wild hop, Celeia is known for its noble characteristics. It has widespread usage in lager and ale-style beers.

COUNTRY

SLOVENIA

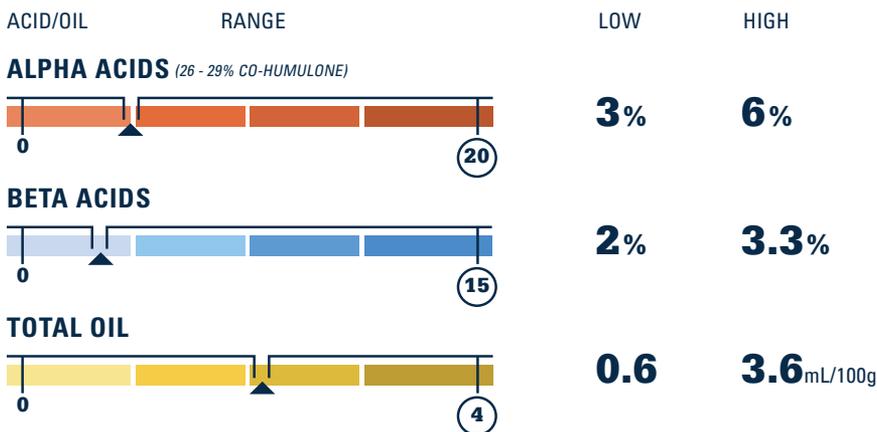
AROMA PROFILE

NOBLE

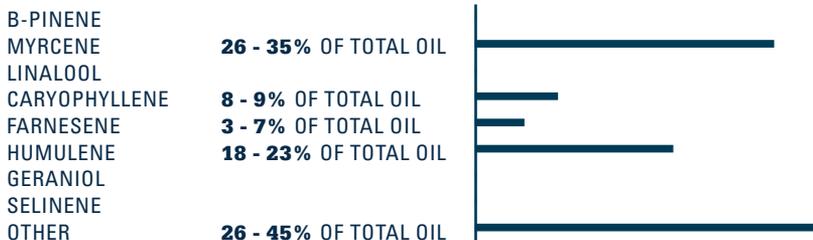
BEER STYLES

BELGIAN-STYLE ALE • LAGER • RED ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

CENTENNIAL



Bred in 1974 and released by Washington State University in 1990, Centennial is an aroma-type cultivar that has found favor as one of the most popular varieties in craft brewing. It is often referred to as a super-Cascade (containing nearly double the alpha content) and can be used for bittering purposes. Centennial is a diploid cross between Brewer's Gold and a USDA male.

COUNTRY

UNITED STATES

AROMA PROFILE

**LEMON • FLORAL
ORANGE BLOSSOM**



BEER STYLES

AMERICAN PALE ALE • IPA

BREWING VALUES

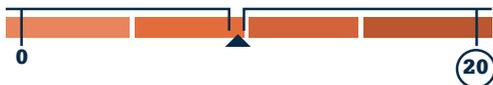
ACID/OIL

RANGE

LOW

HIGH

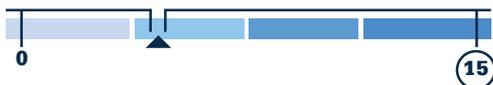
ALPHA ACIDS (23 - 27% CO-HUMULONE)



7%

12%

BETA ACIDS



3.5%

5.5%

TOTAL OIL



1

3 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

0.8 - 1% OF TOTAL OIL

MYRCENE

55 - 65% OF TOTAL OIL

LINALOOL

0.6 - 0.9% OF TOTAL OIL

CARYOPHYLLENE

5 - 7% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

10 - 20% OF TOTAL OIL

GERANIOL

1.2 - 1.8% OF TOTAL OIL

SELINENE

3 - 26% OF TOTAL OIL

OTHER

3 - 26% OF TOTAL OIL



YAKIMA CHIEF HOPS™

CHALLENGER



Bred at Wye College and introduced in 1972, Challenger is a granddaughter of Northern Brewer and niece of Northdown. It is a versatile variety with wide application in both early and late kettle additions.

COUNTRY

UNITED KINGDOM

AROMA PROFILE

CEDAR • GREEN TEA • SWEET FRUIT

BEER STYLES

ENGLISH-STYLE ALE • BROWN ALE • PALE ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

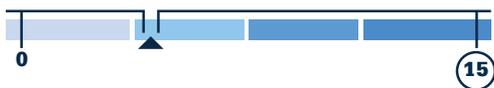
ALPHA ACIDS (20 - 25% CO-HUMULONE)



6.5%

8.5%

BETA ACIDS



4%

4.5%

TOTAL OIL



1

1.7 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

30 - 42% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

9.5% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

25% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

23 - 44% OF TOTAL OIL



YAKIMA CHIEF HOPS™

CHELAN



Developed by John I Haas, Inc. and released in 1994, Chelan is similar to Galena but contains higher alpha acids.

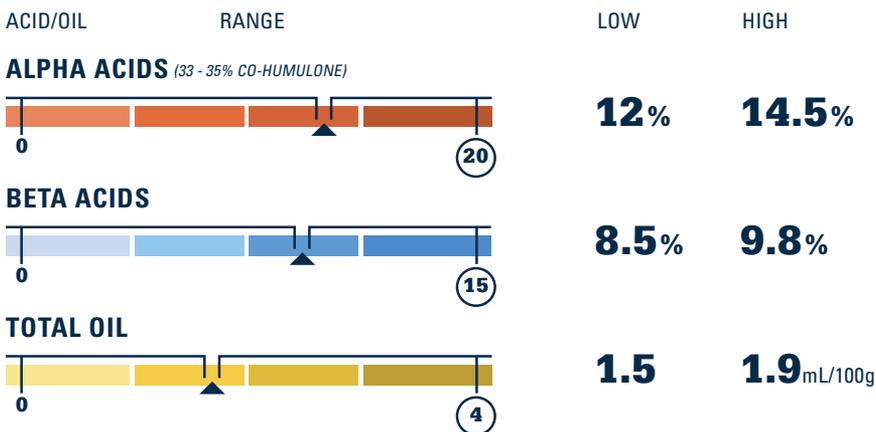
COUNTRY
UNITED STATES

AROMA PROFILE
MILD

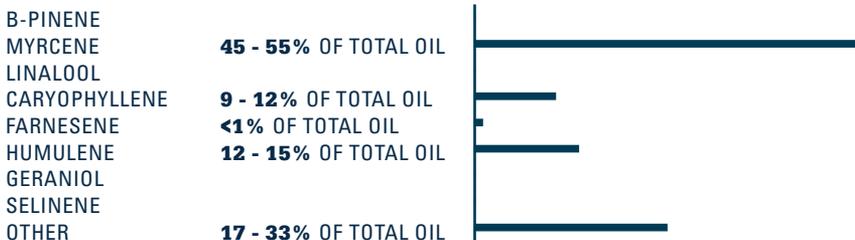
BEER STYLES
AMERICAN-STYLE ALE



BREWING VALUES



TOTAL OIL BREAKDOWN



CHINOOK



Developed by the USDA breeding program in Washington State and released in 1985 as a high alpha bittering variety, Chinook is a cross between Petham Golding and a USDA male. In recent years, it has found favor as a dual purpose hop in the craft brewing community as a result of its spice and pine aroma characteristics.

COUNTRY
UNITED STATES

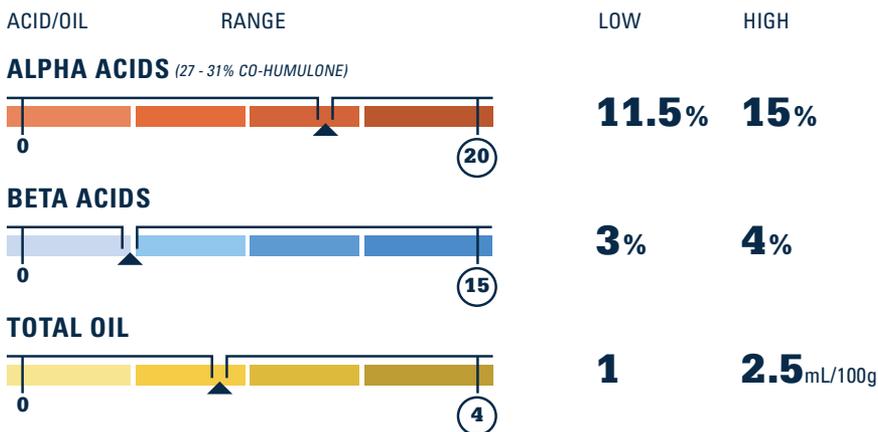
AROMA PROFILE
GRAPEFRUIT • SPICY • PINE



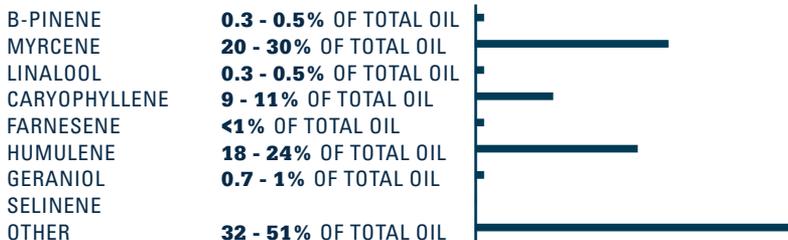
BEER STYLES

IPA • AMERICAN PALE ALE • STOUT PORTER

BREWING VALUES



TOTAL OIL BREAKDOWN



CITRA[®] BRAND



HBC 394 CV

Developed by Hop Breeding Company and released in 2007, Citra[®] HBC 394 cv. features high alpha acid and total oil content with a low percentage of co-humulone. It is one of the top ten aroma varieties for craft brewers imparting distinct citrus and tropical fruit flavors.

COUNTRY

UNITED STATES

AROMA PROFILE

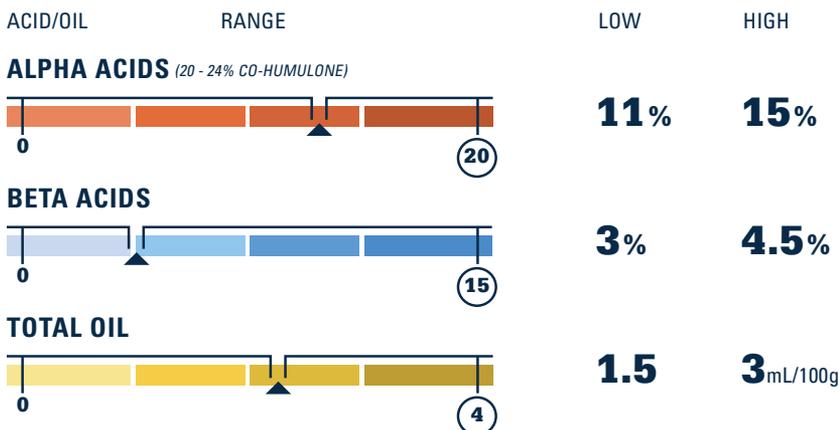
**GRAPEFRUIT • MELON • LIME
GOOSEBERRY • PASSION FRUIT**



BEER STYLES

IPA • AMERICAN PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.7 - 1% OF TOTAL OIL	
MYRCENE	60 - 70% OF TOTAL OIL	
LINALOOL	0.6 - 0.9% OF TOTAL OIL	
CARYOPHYLLENE	5 - 8% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	7 - 12% OF TOTAL OIL	
GERANIOL	0.3 - 0.5% OF TOTAL OIL	
SELINENE		
OTHER	7 - 25% OF TOTAL OIL	



CLUSTER



Cluster is one of the oldest hop varieties grown in the United States and until the late 1970s, accounted for the majority of the country's hop acreage. Its pedigree is unknown, however hybridization of imported varieties and indigenous male hops has been suggested. Cluster is an excellent dual purpose hop and is often used in the reproduction of historical beer styles.

COUNTRY
UNITED STATES

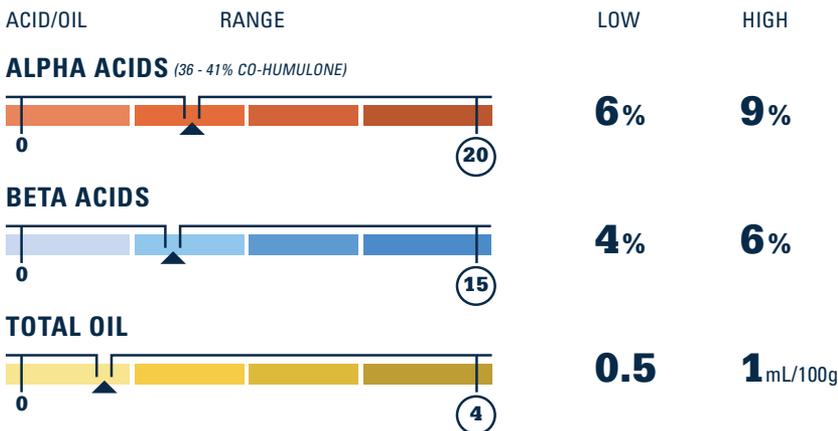
AROMA PROFILE
**FLORAL • EARTHY
SWEET FRUIT**



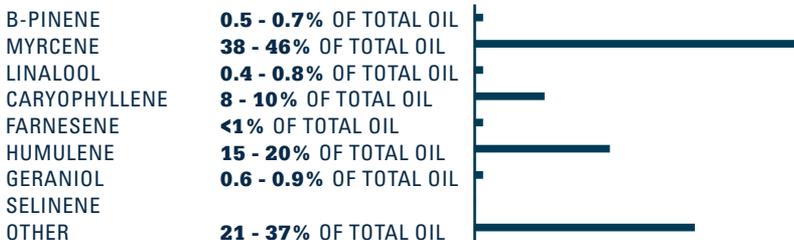
BEER STYLES

LAGER • STOUT • PORTER

BREWING VALUES



TOTAL OIL BREAKDOWN



COLUMBIA



Selected in 1967 at Oregon State University in Corvallis, Oregon, Columbia is a descendant of Fuggle and sister selection of Willamette. Commercial production was discontinued in the early 1980s in favor of Willamette, however small quantities are again being produced.

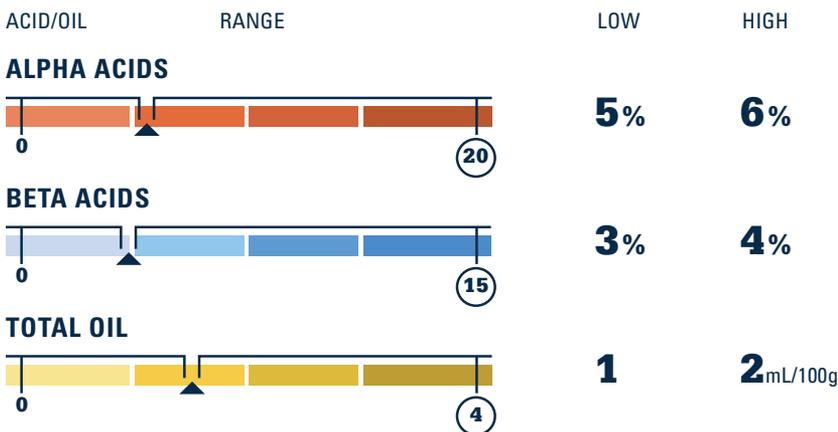
COUNTRY
UNITED STATES

AROMA PROFILE
NOBLE

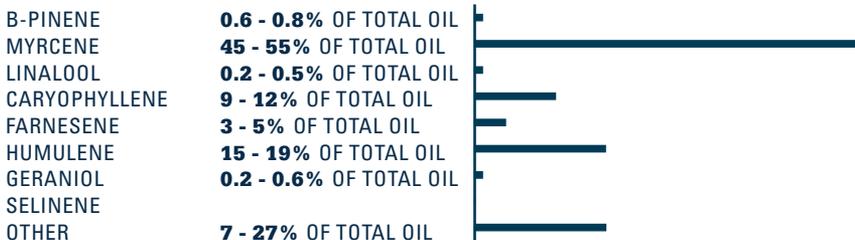
BEER STYLES
ENGLISH-STYLE ALE



BREWING VALUES



TOTAL OIL BREAKDOWN



COLUMBUS



Originally selected by Charles Zimmerman for Hopunion, Inc., Columbus is a descendant of Nugget. It is a high alpha variety and is primarily used for bittering purposes. Columbus is often referred to as CTZ, a trio of similar hops including Tomahawk® and Zeus.

COUNTRY
UNITED STATES

AROMA PROFILE
**BLACK PEPPER • DANK
RED FRUIT**



BEER STYLES

IPA • IMPERIAL ALE • PALE ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

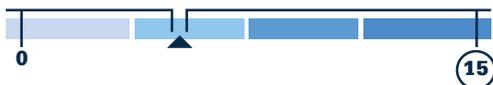
HIGH

ALPHA ACIDS (28 - 30% CO-HUMULONE)



14.5% 17.5%

BETA ACIDS



4.5% 6%

TOTAL OIL



2.5 4.5 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 1% OF TOTAL OIL
MYRCENE	45 - 55% OF TOTAL OIL
LINALOOL	0.4 - 0.6% OF TOTAL OIL
CARYOPHYLLENE	6 - 10% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	9 - 14% OF TOTAL OIL
GERANIOL	0.2 - 0.5% OF TOTAL OIL
SELINENE	
OTHER	18 - 38% OF TOTAL OIL



YAKIMA CHIEF HOPS

COMET



Developed in 1961 and released in 1974 by the USDA, Comet was selected for its high alpha acid content and adaptability to growing conditions in the Yakima Valley. Commercial production ceased in the 1980s in favor of newer super-alpha hops. Comet has made a recent comeback, finding favor in dual purpose applications due to its unique “wild American” aroma.

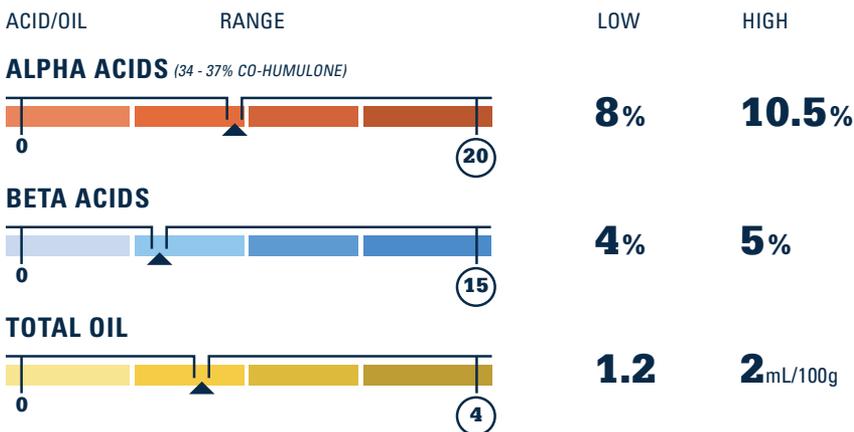
COUNTRY
UNITED STATES

AROMA PROFILE
“WILD AMERICAN” • GRASS GRAPEFRUIT

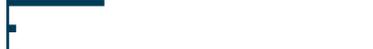


BEER STYLES
ALE • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.8 - 1.1% OF TOTAL OIL	
MYRCENE	40 - 55% OF TOTAL OIL	
LINALOOL	0.5 - 0.8% OF TOTAL OIL	
CARYOPHYLLENE	10 - 15% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	1 - 2% OF TOTAL OIL	
GERANIOL	0.2 - 0.9% OF TOTAL OIL	
SELINENE		
OTHER	24 - 47% OF TOTAL OIL	



CRYSTAL



Bred in 1983 by the USDA, Crystal is a triploid aroma-type cultivar from Hallertau Mittelfrüh, Cascade, Brewer's Gold and Early Green. It is primarily grown in Oregon and has become increasingly popular among craft brewers due to its versatility in a variety of beer styles.

COUNTRY
UNITED STATES

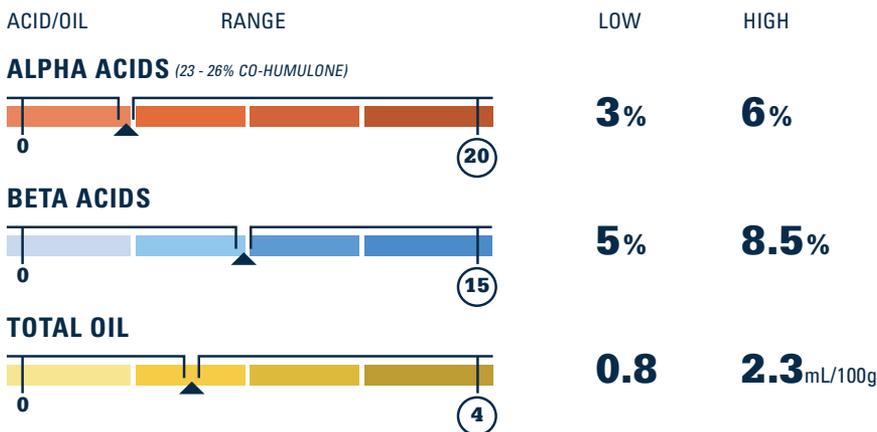
AROMA PROFILE
WOODY • GREEN



BEER STYLES

**BELGIAN-STYLE ALE • ENGLISH-STYLE BITTER
KÖLSCH • LAGER • PILSNER**

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.4 - 1% OF TOTAL OIL	
MYRCENE	30 - 55% OF TOTAL OIL	
LINALOOL	0.6 - 1% OF TOTAL OIL	
CARYOPHYLLENE	5 - 12% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	20 - 30% OF TOTAL OIL	
GERANIOL	0.4 - 0.7% OF TOTAL OIL	
SELINENE		
OTHER	<1% - 43% OF TOTAL OIL	



DANA



Developed as a cross between German Magnum and a wild Slovenian male, Dana displays subtle floral and citrus characteristics.

COUNTRY

SLOVENIA

AROMA PROFILE

FLORAL • CITRUS

BEER STYLES

PALE ALE • IPA

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

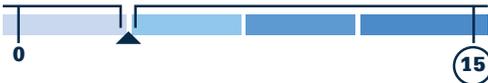
ALPHA ACIDS (22 - 26 CO-HUMULONE)



7.2%

12.6%

BETA ACIDS



2.7%

4.4%

TOTAL OIL



0.9

1.6 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

35 - 53% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

4 - 8% OF TOTAL OIL

FARNESENE

6 - 9% OF TOTAL OIL

HUMULENE

20 - 27% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

3 - 35% OF TOTAL OIL



YAKIMA CHIEF HOPS™

DR. RUDI™ BRAND



68-4-96

Developed at the New Zealand Horticultural Research Centre (now New Zealand Institute for Plant and Food Research) and released in 1976 as "Super Alpha", Dr. Rudi™ is a triploid variety bred from New Zealand Smoothcone. Its name was changed to Dr. Rudi™ in 2012. Dr. Rudi™ works well in single-hopped beers or in conjunction with multiple aroma varieties.

COUNTRY

**NEW
ZEALAND**

AROMA PROFILE

RESIN • PINE • LEMONGRASS

BEER STYLES

ALE • LAGER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (33 - 36% CO-HUMULONE)



10%

12%

BETA ACIDS



7%

8.5%

TOTAL OIL



1.3 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

29% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

10% OF TOTAL OIL

FARNESENE

0.5% OF TOTAL OIL

HUMULENE

33.2% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

27 - 37% OF TOTAL OIL



YAKIMA CHIEF HOPS™

EAST KENT GOLDING

Developed from wild Canterbury Whitebine and released to market in the late 1700s, East Kent Golding is the quintessential English variety. Its ideal application is late aroma hopping or post-fermentation.

COUNTRY

**UNITED
KINGDOM**

AROMA PROFILE

**LAVENDER • HONEY • LEMON • THYME
ORANGE • GRAPEFRUIT**

BEER STYLES

PORTER • STOUT • ENGLISH-STYLE ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

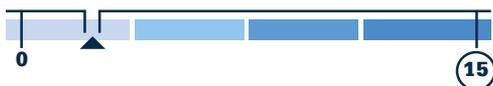
HIGH

ALPHA ACIDS (28 - 32% CO-HUMULONE)



4.5% 6.5%

BETA ACIDS



1.9% 2.8%

TOTAL OIL



0.4 0.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

30% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

12 - 16% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

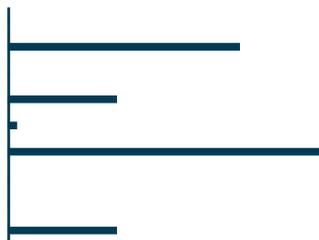
38 - 44% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

9 - 19% OF TOTAL OIL



YAKIMA CHIEF HOPS™

EKUANOT® BRAND



HBC 366 CV

Developed by Hop Breeding Company and released in 2014, Ekuanot® HBC 366 cv. features pronounced aroma characteristics and extremely high oil content. This variety bursts out of the spring soil in vibrant yellow and gradually matures to a deep green color by Fall harvest.

COUNTRY

UNITED STATES

AROMA PROFILE

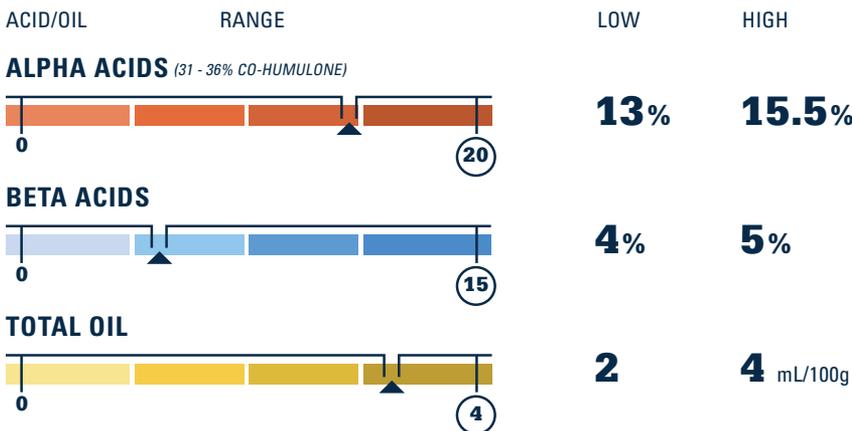
**MELON • BERRY • LIME • APPLE
PAPAYA • GREEN PEPPER
MANGO • MANDARIN ORANGE**



BEER STYLES

**IPA • AMERICAN-STYLE ALE
BELGIAN-STYLE ALE • AMERICAN PALE ALE**

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.4 - 0.8% OF TOTAL OIL	
MYRCENE	30 - 45% OF TOTAL OIL	
LINALOOL	0.2 - 0.5% OF TOTAL OIL	
CARYOPHYLLENE	8 - 12% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	12 - 20% OF TOTAL OIL	
GERANIOL	0.2 - 0.5% OF TOTAL OIL	
SELINENE		
OTHER	20 - 48% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

EL DORADO® BRAND

El Dorado was developed in 2008, and released in 2010 by CLS Farms in the Moxee, Washington.

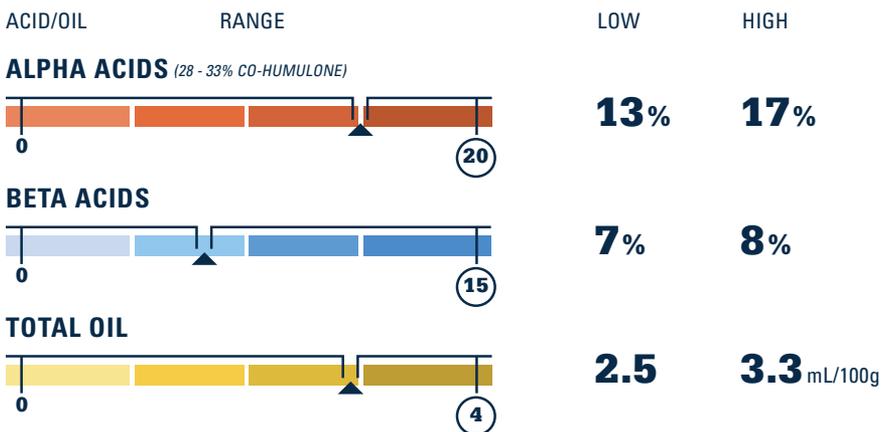
COUNTRY
UNITED STATES

AROMA PROFILE
**CHERRY • APRICOT • PEAR • CITRUS
WATERMELON • GRASS • WOOD • MINT**

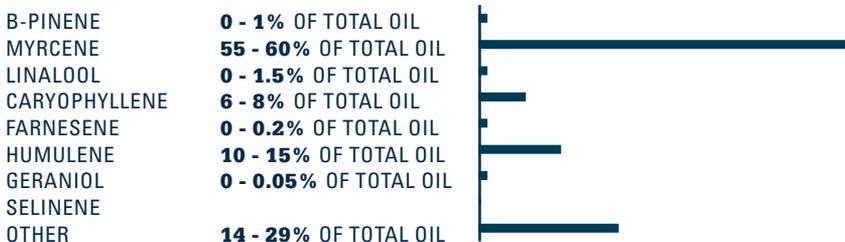
BEER STYLES

**BLONDE • LAGER • AMERICAN PALE ALE • IPA • CREAM ALE
RED ALE • WHEAT**

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

ELLA™ BRAND



01-220-060

Bred in 2001 and released in 2007, Ella™ is a half-sister to Galaxy™ and daughter of male parent Spalt. It is reminiscent of a noble variety in lower doses, but imparts strong tropical fruit flavors in larger additions.

COUNTRY

AUSTRALIA

AROMA PROFILE

**FLORAL • NOBLE • SPICY • STAR ANISE
GRAPEFRUIT**

BEER STYLES

LAGER • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (34 - 38% CO-HUMULONE)



13.3% 16.3%

BETA ACIDS



4.8% 7.8%

TOTAL OIL



2.4 3.4 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

40 - 50% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

FARNESENE

HUMULENE

GERANIOL

SELINENE

OTHER

12 - 18% OF TOTAL OIL

<1% OF TOTAL OIL

16 - 22% OF TOTAL OIL

2 - 4% OF TOTAL OIL

5 - 29% OF TOTAL OIL



YAKIMA CHIEF HOPS™

ENDEAVOUR



Bred in 2002 at Wye College, Endeavour is a seedling of Cascade and granddaughter of Target. It provides a unique English flavor with notable citrus and red-fruit flavors.

COUNTRY

**UNITED
KINGDOM**

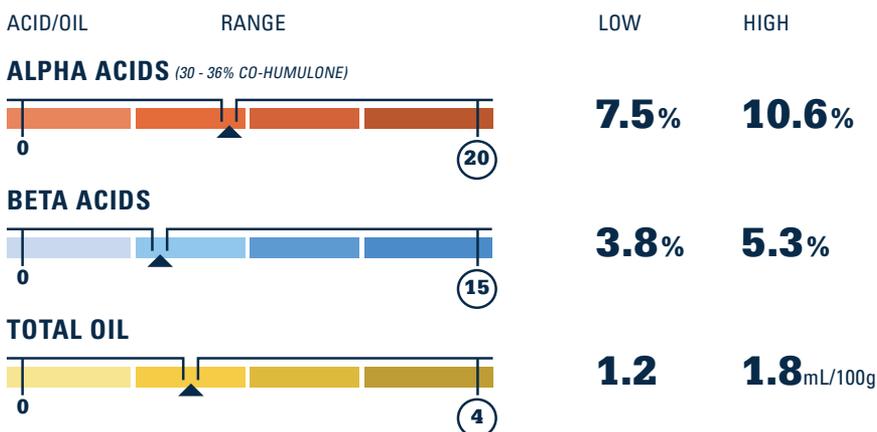
AROMA PROFILE

**BLACKCURRANT • LOGANBERRY • SPICE
GRAPEFRUIT • LIME**

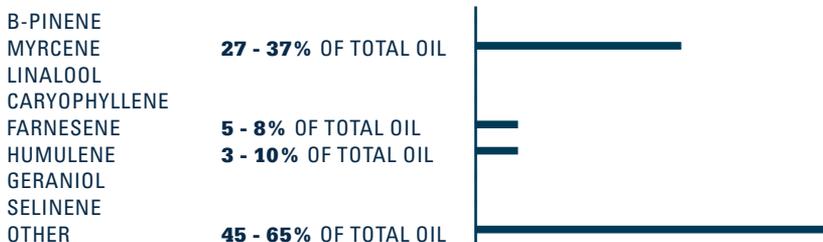
BEER STYLES

ENGLISH-STYLE ALE • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

ENIGMA™ BRAND



02-016-008

Expanded in 2013, Enigma™ is one of the newest Australian hops. It is a descendant of Swiss Tettngang, but offers many more diverse flavors than its heritage would suggest. Enigma™ is an excellent choice for late additions and dry hop applications.

COUNTRY

AUSTRALIA

AROMA PROFILE

**PINOT GRIS • RASPBERRY • REDCURRANT
TROPICAL FRUIT**

BEER STYLES

PALE ALE • IPA • AMBER

BREWING VALUES

ACID/OIL

RANGE

LOW

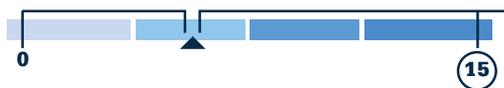
HIGH

ALPHA ACIDS (38 - 40% CO-HUMULONE)



13.5% 16.5%

BETA ACIDS



4.8% 6.4%

TOTAL OIL



2.4 3 mL/100g

TOTAL OIL BREAKDOWN

TOTAL OIL BREAKDOWN UNAVAILABLE



YAKIMA CHIEF HOPS™

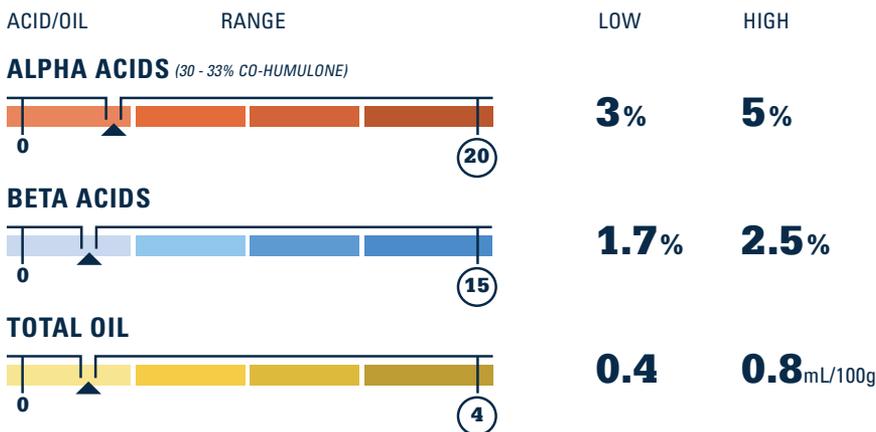
Found as a chance seedling in 1987 and grown as an ornamental garden plant until 2004, Epic was expanded for commercial production in winter 2014-2015. The history of the field, combined with the oil composition of Epic, strongly suggests that the lineage includes Alliance hops. Early brewing experience indicated medium intensity, deep fruit and berry-like aromas without any citrus or floral notes. Epic is an excellent late aroma hop.

COUNTRY
UNITED KINGDOM

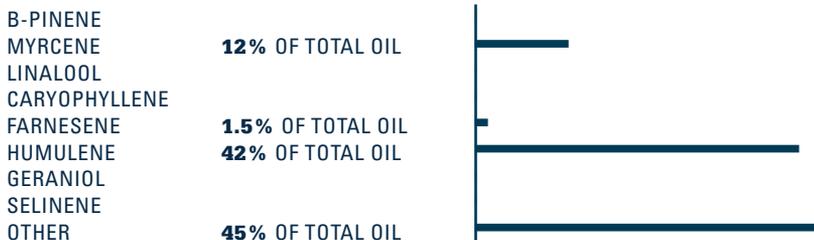
AROMA PROFILE
FRUITY • BERRY

BEER STYLES
PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



EROICA



Released by the Idaho Agricultural Experiment Station, Oregon Agricultural Experiment Station, and USDA-ARS in 1982, Eroica is an open pollinated cross of Brewer's Gold. It is primarily a bittering hop, however some brewers have noted fruit forward flavors in late applications.

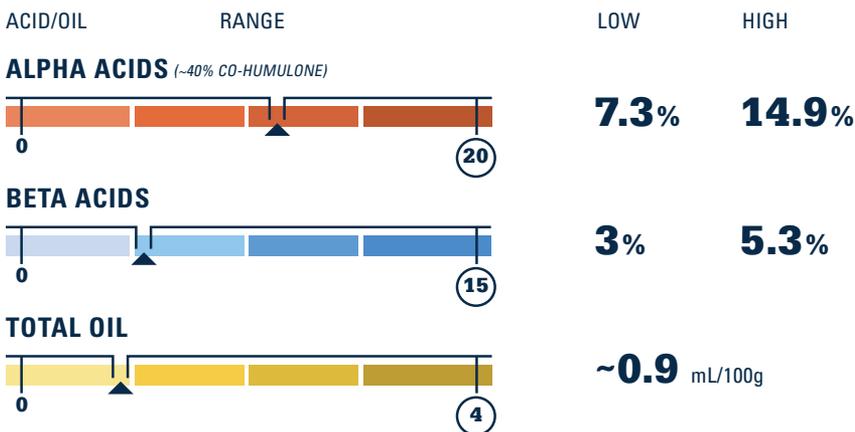
COUNTRY
UNITED STATES

AROMA PROFILE
FRUIT

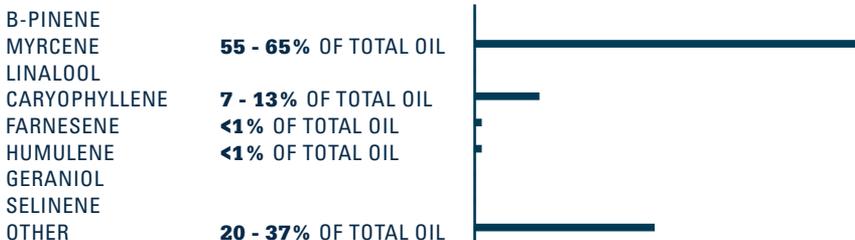
BEER STYLES

PALE ALE • AMBER • PORTER • ENGLISH-STYLE BITTER

BREWING VALUES



TOTAL OIL BREAKDOWN



FALCONER'S FLIGHT®

BLEND

Developed by Hopunion LLC in 2010, Falconer's Flight® hop pellets are an exclusive proprietary hop blend created to honor and support the legacy of Northwest brewing legend, Glen Hay Falconer. Proceeds from each Falconer's Flight® purchase is contributed to the Glen Hay Falconer Foundation. These hop pellets are an excellent complement to many IPA and Pale Ale-oriented hop varieties. Specific aroma descriptors include distinct tropical, floral, lemon and grapefruit characteristics.

COUNTRY
UNITED STATES

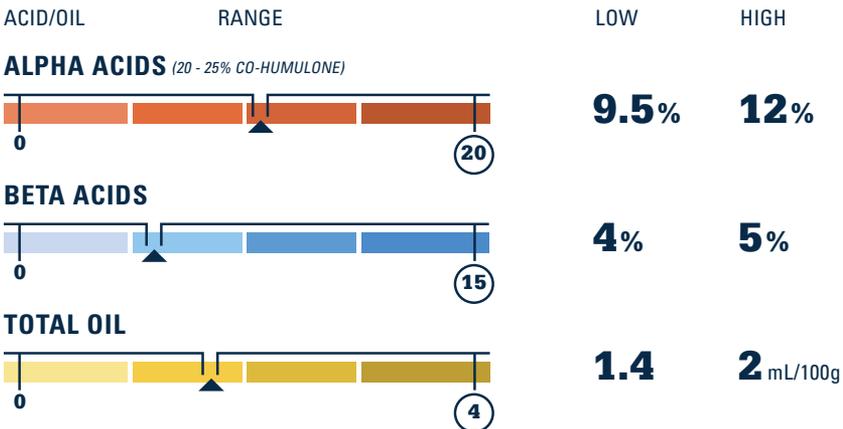
AROMA PROFILE
LEMON • GRAPEFRUIT



BEER STYLES

AMERICAN PALE ALE • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 0.9% OF TOTAL OIL	
MYRCENE	43 - 62% OF TOTAL OIL	
LINALOOL	0.5 - 0.9% OF TOTAL OIL	
CARYOPHYLLENE	5 - 9% OF TOTAL OIL	
FARNESENE	1 - 2% OF TOTAL OIL	
HUMULENE	11 - 17% OF TOTAL OIL	
GERANIOL	0.4 - 0.8% OF TOTAL OIL	
SELINENE		
OTHER	7.4 - 38.5% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

FALCONER'S FLIGHT 7CS®

BLEND

This proprietary pellet blend combines seven “C” hops and additional experimental varieties. Like its predecessor, Falconer’s Flight 7Cs® delivers strong fruit and citrus characteristics, but is layered with additional spicy, earthy overtones that allow it to function as the perfect addition to American-style ales.

COUNTRY
UNITED STATES

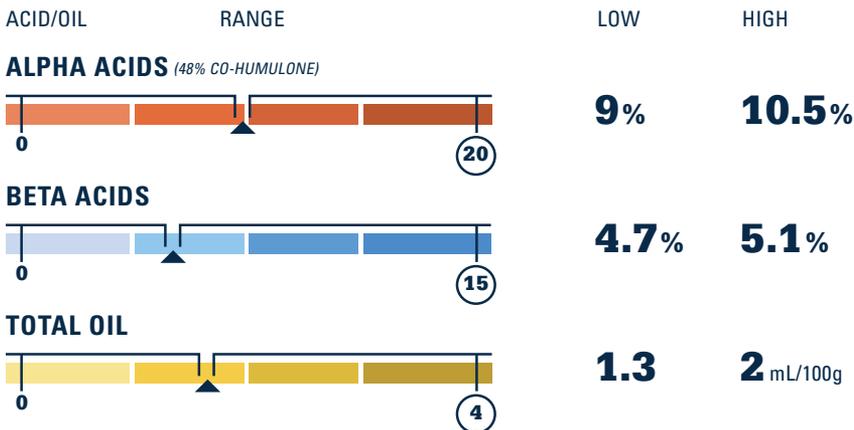
AROMA PROFILE
FRUIT • CITRUS • SPICE • EARTH



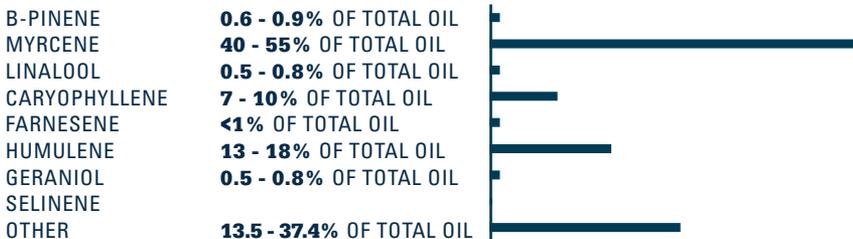
BEER STYLES

AMERICAN PALE ALE • IPA • DOUBLE IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

FIRST GOLD



Bred at Wye College in 1995, First Gold is a cross between WGV (Whitbread Golding Variety) and a dwarf male. It features many of the flavor characteristics of WGV and has found favor in both general kettle and late or dry hopping applications.

COUNTRY

UNITED KINGDOM

AROMA PROFILE

**GERANIUM • MAGNOLIA • APRICOT
TANGERINE • ORANGE MARMALADE**

BEER STYLES

**BELGIAN-STYLE BLONDE • ENGLISH-STYLE ALE • BITTER
BIERE DE GARDE • SAISON**

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

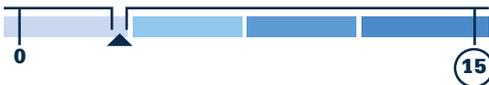
ALPHA ACIDS (32 - 34% CO-HUMULONE)



5.6%

9.3%

BETA ACIDS



2.3%

4.1%

TOTAL OIL



0.7

1.5 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

24 - 27% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

6 - 7% OF TOTAL OIL

FARNESENE

2 - 4% OF TOTAL OIL

HUMULENE

20 - 24% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

38 - 48% OF TOTAL OIL



YAKIMA CHIEF HOPS™

FUGGLE



Discovered as a chance seedling in 1861 and propagated by Richard Fuggle in Kent, England in 1875, Fuggle was once the most prominent English hop. It accounted for 78% of production in 1949. The variety is now grown in the United States, primarily in Oregon, and displays slightly stronger characteristics than the English version. Fuggle is often compared to, and used in conjunction with Golding hops.

COUNTRY
UNITED STATES

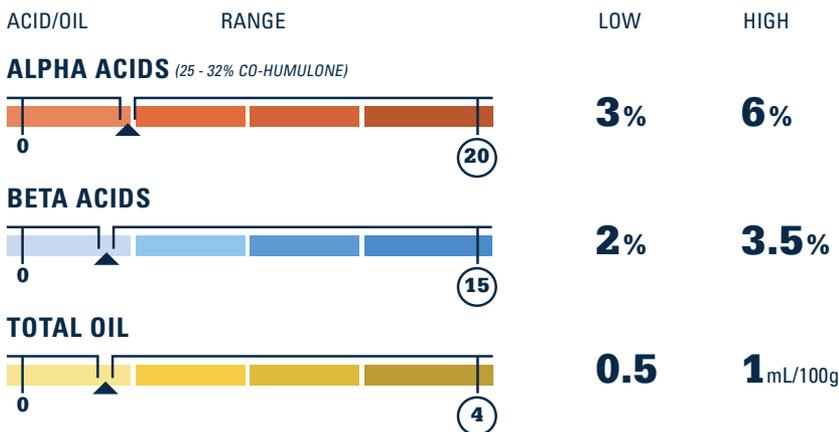
AROMA PROFILE
**MILD • WOOD • GRASS
MINT**



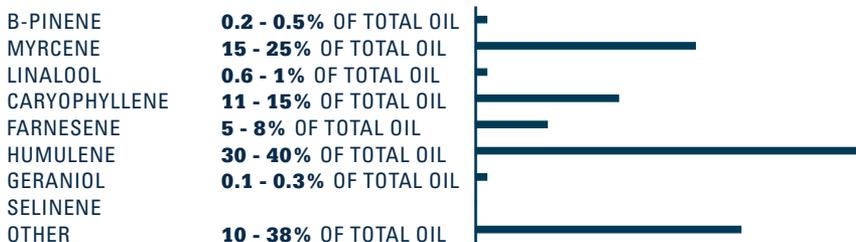
BEER STYLES

PALE ALE • BROWN ALE • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN



FUGGLE



Selected from a seedling in 1861 and released in 1875, Fuggle is the most revered and famous English variety. It is known for its classic English aroma and is often used in conjunction with Golding.

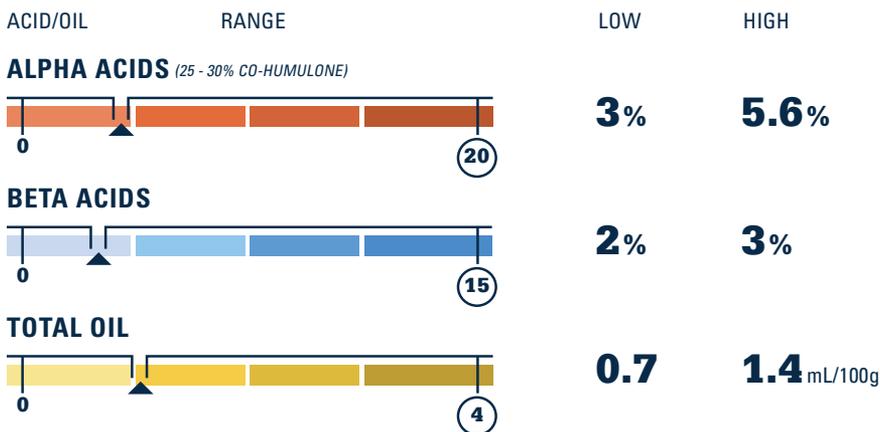
COUNTRY
UNITED KINGDOM

AROMA PROFILE
GREEN TEA • MINT • GRASS • FLORAL

BEER STYLES

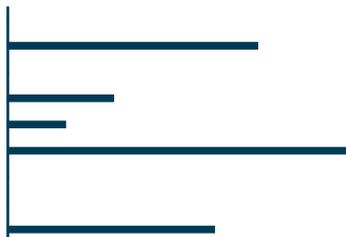
ENGLISH-STYLE BITTER • STOUT • BROWN ALE • PORTER PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	24 - 28% OF TOTAL OIL
MYRCENE	
LINALOOL	
CARYOPHYLENE	9 - 13% OF TOTAL OIL
FARNESENE	5 - 7% OF TOTAL OIL
HUMULENE	33 - 38% OF TOTAL OIL
GERANIOL	
SELINENE	
OTHER	14 - 29% OF TOTAL OIL



GALAXY™ BRAND



94-203-008

Commercially available since 2009, Galaxy™ is the most internationally recognized Australian hop variety. Its lineage includes high alpha Australian hops and European cultivars, specifically German Perle.

COUNTRY

AUSTRALIA

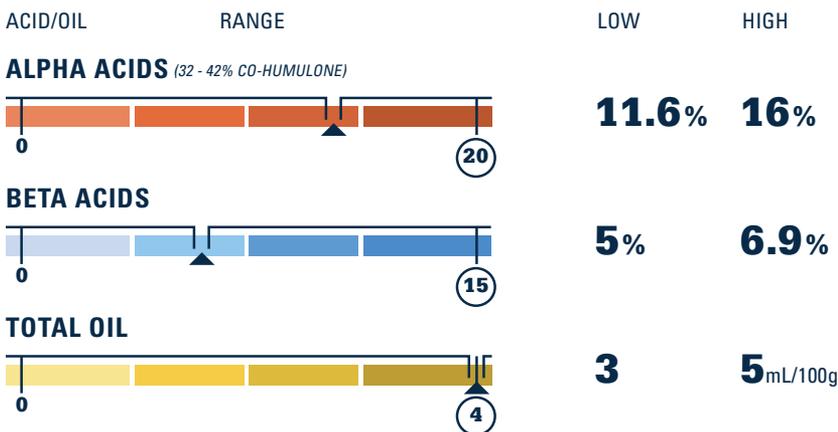
AROMA PROFILE

PASSIONFRUIT • PEACH • CLEAN CITRUS

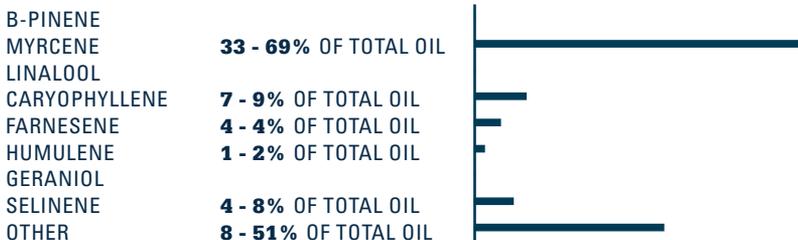
BEER STYLES

PALE ALE • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

GALENA



Developed by the USDA breeding program in Idaho in 1968 and released in 1978, Galena is an open pollinated cross of Brewer's Gold. It is a high alpha variety with increasingly popular aroma characteristics.

COUNTRY
UNITED STATES

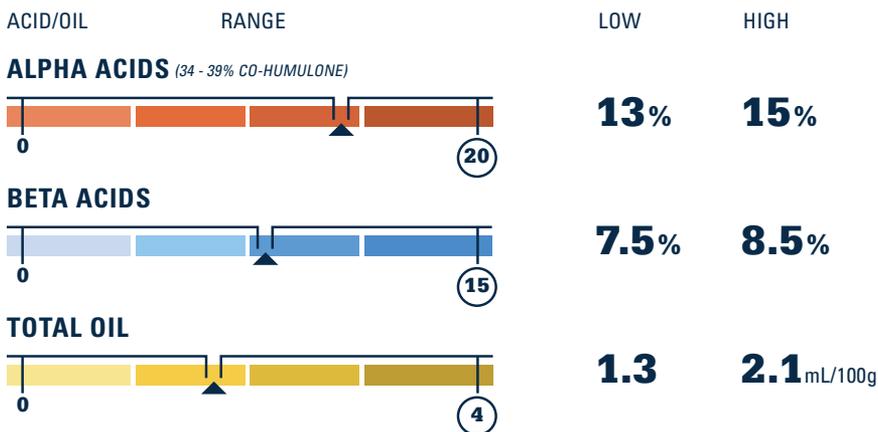
AROMA PROFILE
**PEAR • PINEAPPLE • LIME
BLACKCURRANT • GRAPEFRUIT**



BEER STYLES

AMERICAN ALE • PORTER • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.4 - 0.7% OF TOTAL OIL	
MYRCENE	40 - 50% OF TOTAL OIL	
LINALOOL	0.1 - 0.3% OF TOTAL OIL	
CARYOPHYLLENE	5 - 9% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	11 - 17% OF TOTAL OIL	
GERANIOL	0.5 - 0.8% OF TOTAL OIL	
SELINENE		
OTHER	21 - 42% OF TOTAL OIL	



GLACIER



Released in 2000 by Washington State University, Glacier is an offspring of French Elsasser, Brewer's Gold and Northern Brewer. It was selected for its good yield potential and low co-humulone, providing smoothness and balanced bitterness in beer.

COUNTRY

UNITED STATES

AROMA PROFILE

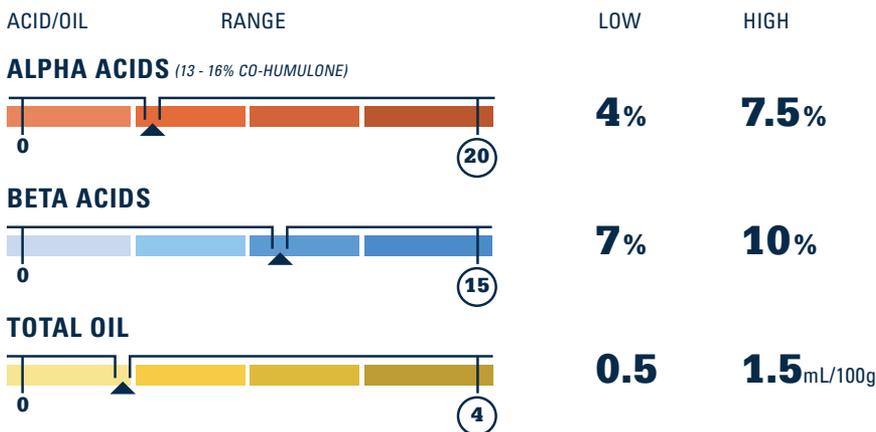
PLUM • BLACKBERRY • WOOD



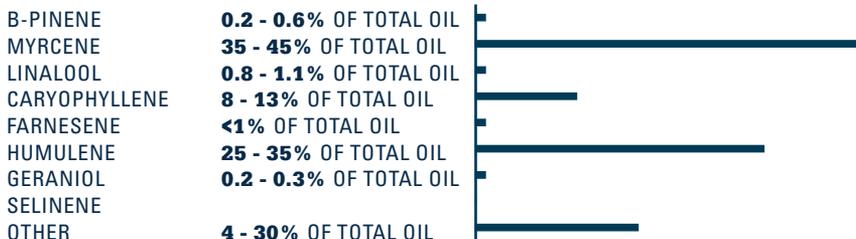
BEER STYLES

**ENGLISH-STYLE PALE ALE • PORTER • STOUT
ENGLISH-STYLE BITTER**

BREWING VALUES



TOTAL OIL BREAKDOWN



GOLDING



Golding hops consist of a group of traditional English aroma varieties which have been cultivated since 1790. The cultivar originated in England and was named after villages in East Kent (Petham, Rothersham, Canterbury, Eastwell). US Golding is the Canterbury strain.

COUNTRY
UNITED STATES

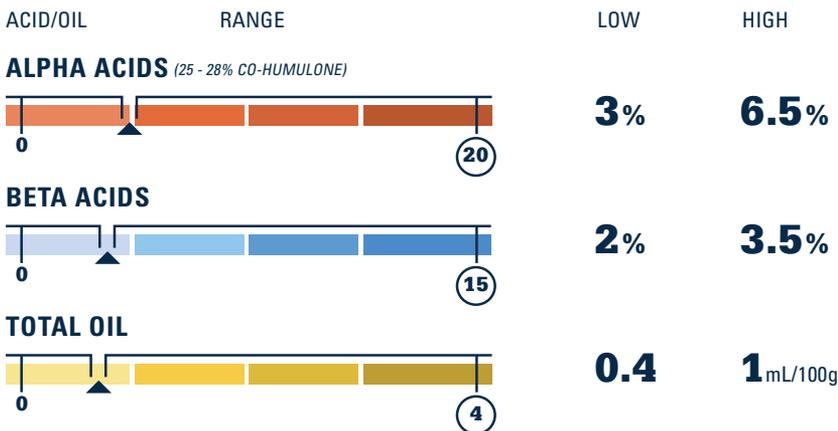
AROMA PROFILE
DELICATE • SWEET FLORAL



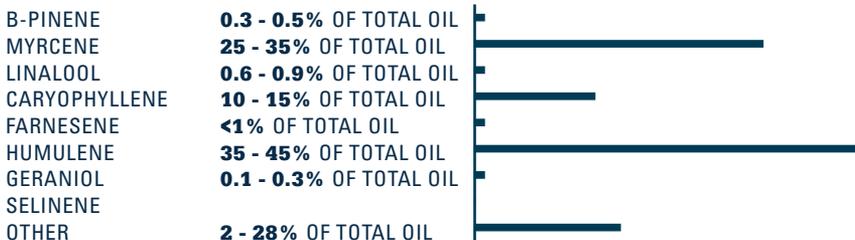
BEER STYLES

PALE ALE • STOUT • BITTER • BARLEY WINE

BREWING VALUES



TOTAL OIL BREAKDOWN



GREEN BULLET



Released in 1972 from the New Zealand DSIR (now New Zealand Institute for Plant and Food Research) Green Bullet is a triploid alpha variety bred by open pollination of the New Zealand "Smoothcone" variety. It is traditionally considered a bittering variety for lagers, but also carries a spicy characteristics typical of Slovenia hop varieties.

COUNTRY

NEW ZEALAND

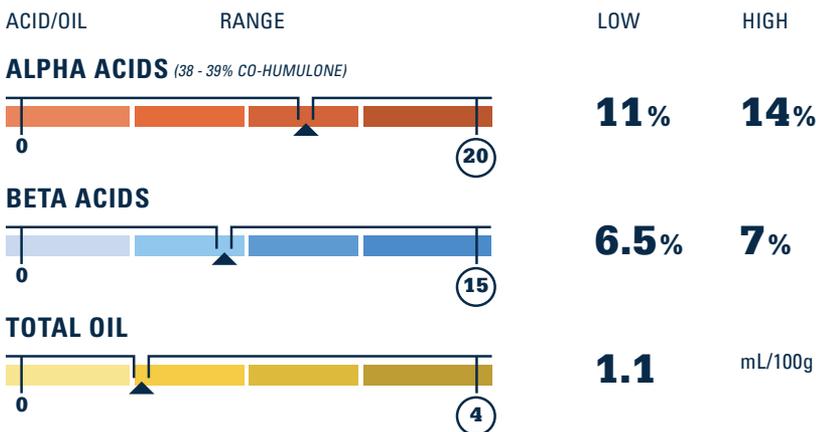
AROMA PROFILE

SPICY • DRIED FRUIT • FLORAL

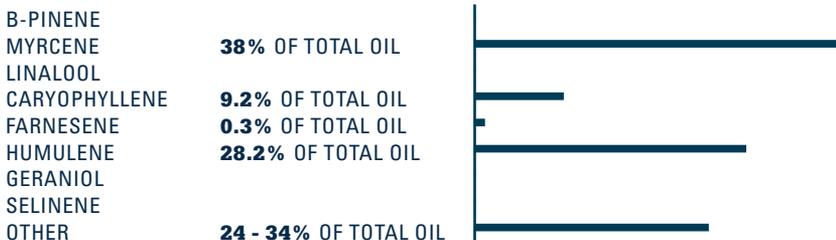
BEER STYLES

ENGLISH-STYLE BITTER • LAGER • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

HALLERTAU



US Hallertau originates from the classic Hallertau variety of Germany. It is a noble aroma variety. Despite low yield and low resistance to disease, Hallertau remains a historic hop and is often celebrated in the production of purist recipes and traditional beer styles.

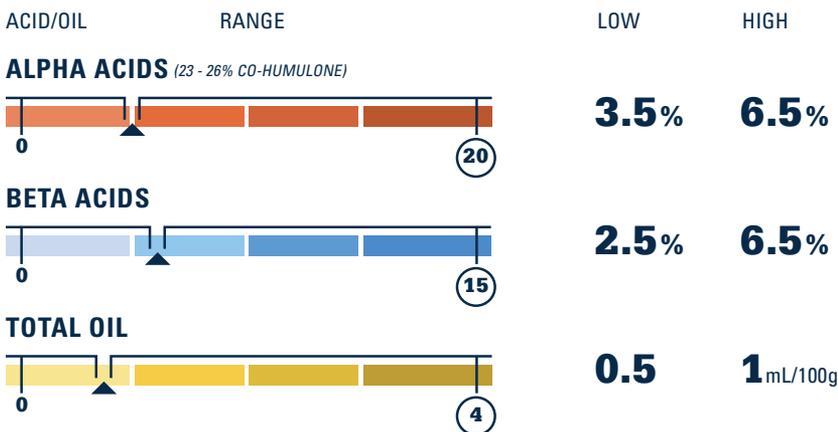
COUNTRY
UNITED STATES

AROMA PROFILE
NOBLE

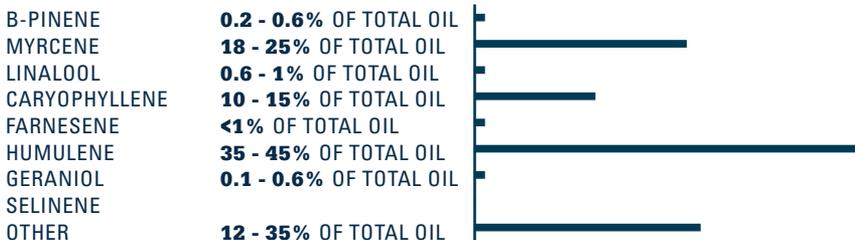
BEER STYLES
BOCK • PILSNER • LAGER



BREWING VALUES



TOTAL OIL BREAKDOWN



HALLERTAU BLANC



Bred at the Hop Research Institute in Hüll and released in 2012, Hallertau Blanc was commercialized as a new, German aroma variety in response to growing demand from the craft beer industry for distinct flavor profiles. Hallertau Blanc is the daughter of Cascade and displays a wide variety of tropical fruit, stone fruit and citrus flavors.

COUNTRY

GERMANY

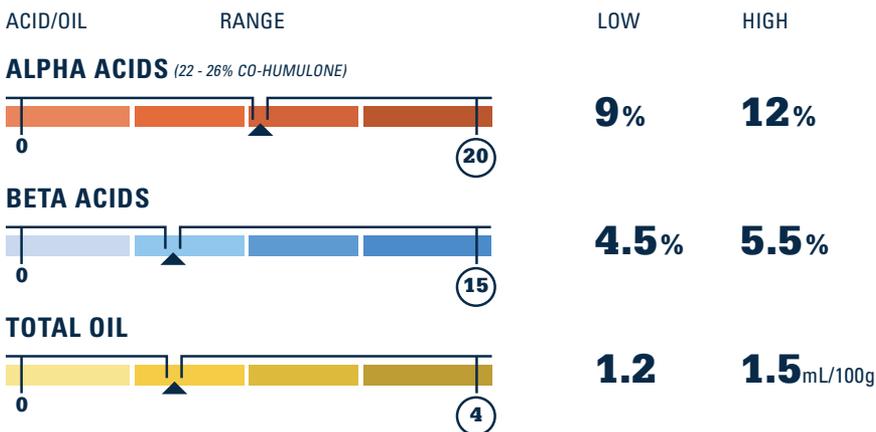
AROMA PROFILE

**PASSION FRUIT • GRAPEFRUIT • PINEAPPLE
GRAPE • LEMONGRASS**

BEER STYLES

IPA • PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	50 - 75% OF TOTAL OIL	
MYRCENE	0.2 - 0.5% OF TOTAL OIL	
LINALOOL	0 - 2% OF TOTAL OIL	
CARYOPHYLLENE	0 - 2% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	0 - 3% OF TOTAL OIL	
GERANIOL		
SELINENE		
OTHER	19 - 49% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

HELGA™ BRAND



A-86-29

Bred in 1986 and formerly known as Southern Hallertau, Helga™ is a descendant of Hallertau Mittelfrüh. Its brewing characteristics resemble that of its parent, however it demonstrates a forgiving and refined character in a variety of beer styles and hop applications.

COUNTRY

AUSTRALIA

AROMA PROFILE

PLEASANT • NOBLE

BEER STYLES

ALE • LAGER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (20 - 23% CO-HUMULONE)



5.4%

7.3%

BETA ACIDS



5%

7%

TOTAL OIL



0.6

1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

1 - 13% OF TOTAL OIL

MYRCENE

0.1 - 0.6% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

10 - 45% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

35 - 55% OF TOTAL OIL

GERANIOL

2 - 4% OF TOTAL OIL

SELINENE

<1% - 51% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

HERALD



Bred at Wye College and registered in 1996, Herald is a sister to Pioneer and Pilgrim hops. It is known for its clean bittering characteristics and fresh citrus flavors.

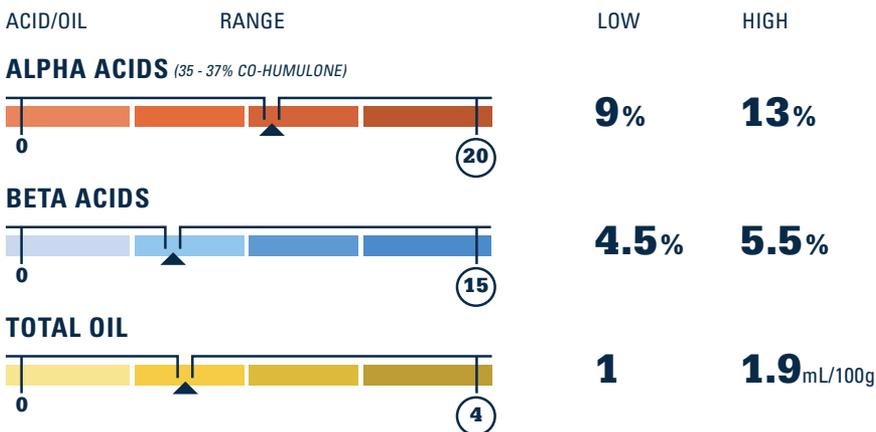
COUNTRY
UNITED KINGDOM

AROMA PROFILE
ORANGE • GRAPEFRUIT

BEER STYLES

PALE ALE • ENGLISH-STYLE BITTER • DARK ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	40% OF TOTAL OIL
MYRCENE	
LINALOOL	7% OF TOTAL OIL
CARYOPHYLLENE	<1% OF TOTAL OIL
FARNESENE	15% OF TOTAL OIL
HUMULENE	
GERANIOL	
SELINENE	
OTHER	37 - 44% OF TOTAL OIL



YAKIMA CHIEF HOPS™

HERKULES



Bred at the Hop Research Center in Hüll and released in 2006, Herkules is a high alpha, bittering hop that holds true to its name. It is a daughter of Taurus with some citrus and melon characteristics.

COUNTRY

GERMANY

AROMA PROFILE

ROBUST • MELON

BEER STYLES

GERMAN-STYLE LAGER • ALE • ALTBIER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

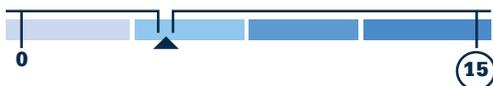
ALPHA ACIDS (32 - 38% CO-HUMULONE)



12%

17%

BETA ACIDS



4%

5.5%

TOTAL OIL



1.6

2.4 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

30 - 50% OF TOTAL OIL

MYRCENE

0.3 - 0.8% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

7 - 12% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

30 - 45% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

<1% - 32% OF TOTAL OIL



YAKIMA CHIEF HOPS™

HERSBRUCKER



A landrace variety originating from the Hersbruck region of Southern Germany, Hersbrucker has expanded and is now widely grown throughout the Hallertau and Spalt regions. It displays a delicate aroma profile that is often compared to other noble varieties.

COUNTRY

GERMANY

AROMA PROFILE

HAY • TOBACCO • ORANGE

BEER STYLES

LAGER • PILSNER • BOCK • WHEAT • KÖLSCH • HELLES

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

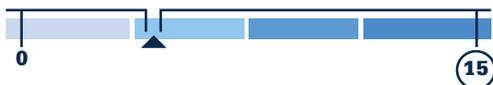
ALPHA ACIDS (17 - 25% CO-HUMULONE)



1.5%

4%

BETA ACIDS



2.5%

6%

TOTAL OIL



0.5

1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

15 - 30% OF TOTAL OIL

MYRCENE

0.5 - 1% OF TOTAL OIL

LINALOOL

8 - 13% OF TOTAL OIL

CARYOPHYLLENE

FARNESENE

<1% OF TOTAL OIL

HUMULENE

20 - 30% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

25 - 56% OF TOTAL OIL



YAKIMA CHIEF HOPS™

HORIZON



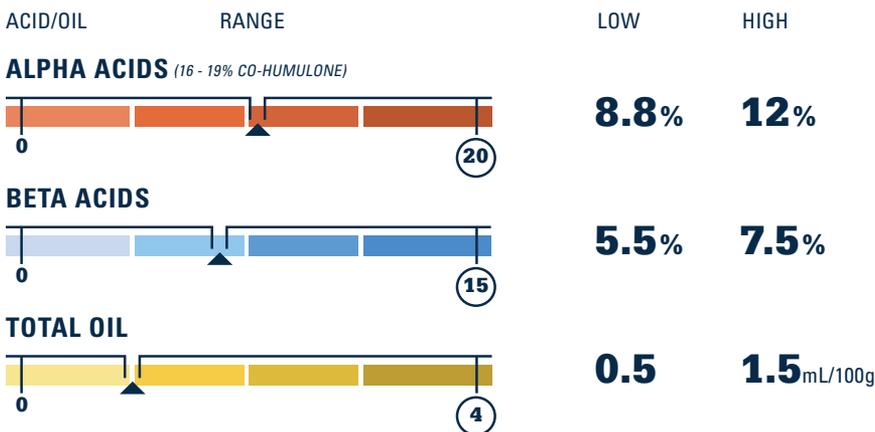
Bred in Oregon in 1970 and released in 1997, Horizon is a descendant of Brewer's Gold and half-sister to Nugget. Its low co-humulone is similar to noble varieties and provides smoothness to beer, however alpha acid levels can reach as high as 12%. Horizon can be utilized in every stage of the brewing process.

COUNTRY
UNITED STATES

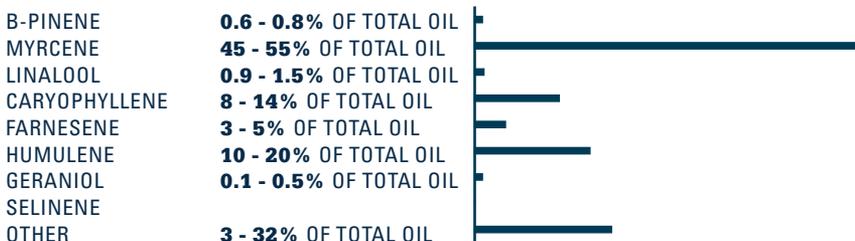
AROMA PROFILE
FLORAL BOUQUET • SPICY

BEER STYLES
ALE • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN



HUELL MELON



Bred at the Hop Research Institute in Hüll and released in 2012, Huell (Hüll) Melon was commercialized as a new, German aroma variety in response to growing demand from the craft beer industry for distinct flavor profiles. It displays bold flavors that are not associated with typical hop variety aromas and has found favor in many hop forward, IPA and pale ale beer styles.

COUNTRY

GERMANY

AROMA PROFILE

**HONEYDEW MELON • STRAWBERRY
TROPICAL FRUIT • ORANGE • VANILLA**

BEER STYLES

WHEAT • BELGIAN-STYLE ALE • PALE ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (25 - 30% CO-HUMULONE)



6.9%

7.5%

BETA ACIDS



7.3%

7.9%

TOTAL OIL



0.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

36% OF TOTAL OIL

MYRCENE

0.4 - 0.7% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

5 - 10% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

10 - 20% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

32 - 48% OF TOTAL OIL



YAKIMA CHIEF HOPS™

IDAHO 7™ BRAND



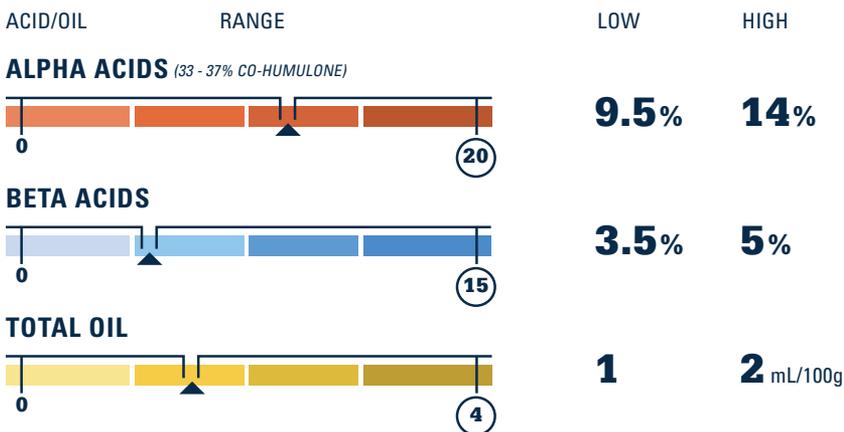
Idaho 7™ was bred and released by Jackson Farms near Boise, Idaho. Idaho 7™ presents as pungent tropical fruit and citrus (think apricot, orange, red grapefruit, papaya) with big notes of resinous pine and hints of black tea.

COUNTRY
UNITED STATES

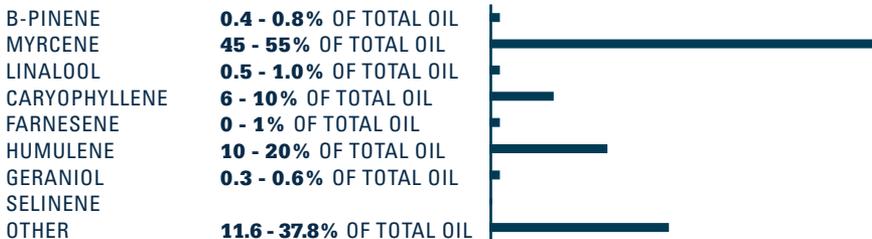
AROMA PROFILE
**PINEAPPLE • PEACH • PINE • RESIN • MANGO
BLACK TEA**

BEER STYLES
IPA • PALE ALE • WHEAT

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

INDEPENDENCE



TRI2303 BLEND

Paying homage to the classic hops, Independence blend merges old world with new world spirit giving a truly American aroma and flavor profile. Bringing forth tobacco, earthy, pine and grassy notes with citrus and herbs to support the aroma profile, Independence symbolizes the pioneer spirit carried through the many generations of growers in the Pacific Northwest.

COUNTRY

UNITED STATES

AROMA PROFILE

**FLORAL • STONE FRUIT • CITRUS
HERBAL • TOBACCO • EARTH
PINE • GRASS**



BEER STYLES

**AMERICAN-STYLE PILSNER, LAGER,
BLONDE & PALE ALE**

BREWING VALUES

ACID/OIL

RANGE

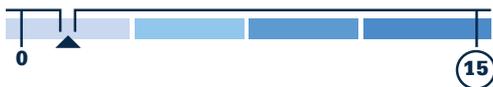
PERCENTAGE

ALPHA ACIDS (20.8% CO-HUMULONE)



4.7%

BETA ACIDS



1.5%

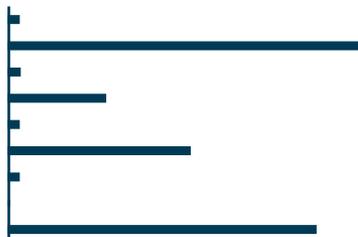
TOTAL OIL



0.4 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.6% OF TOTAL OIL
MYRCENE	36.6% OF TOTAL OIL
LINALOOL	1.1% OF TOTAL OIL
CARYOPHYLENE	10% OF TOTAL OIL
FARNESENE	0.1% OF TOTAL OIL
HUMULENE	18.8% OF TOTAL OIL
GERANIOL	0.9% OF TOTAL OIL
SELINENE	
OTHER	31.9% OF TOTAL OIL



YAKIMA CHIEF HOPS™

JARRYLO[®] BRAND



ADHA 881

Jarrylo[®] is named after Jarilo, the Slavic god of fertility and springtime. Jarrylo's[®] banana, pear, spice aroma translates perfectly to Pale Ales, Saisons and Belgians.

COUNTRY

UNITED STATES

AROMA PROFILE

BANANA • GRASS • PEAR • ORANGE • SPICY FRUIT

BEER STYLES

PALE ALE • SAISON • BELGIAN-STYLE ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

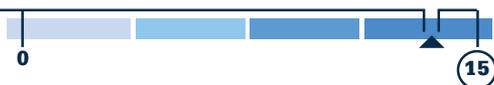
ALPHA ACIDS (34 - 37% CO-HUMULONE)



15%

17%

BETA ACIDS



6%

7.5%

TOTAL OIL



3.6

4.3 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

40 - 55% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

8 - 11% OF TOTAL OIL

FARNESENE

0 - 1% OF TOTAL OIL

HUMULENE

15 - 18% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

15 - 37% OF TOTAL OIL



YAKIMA CHIEF HOPS[™]

KAZBEK



Selected from breeding material with origin in Russian wild hops, Kazbek was released in 2008. It is named after the highest peak within the middle Caucasus mountain range.

COUNTRY

**CZECH
REPUBLIC**

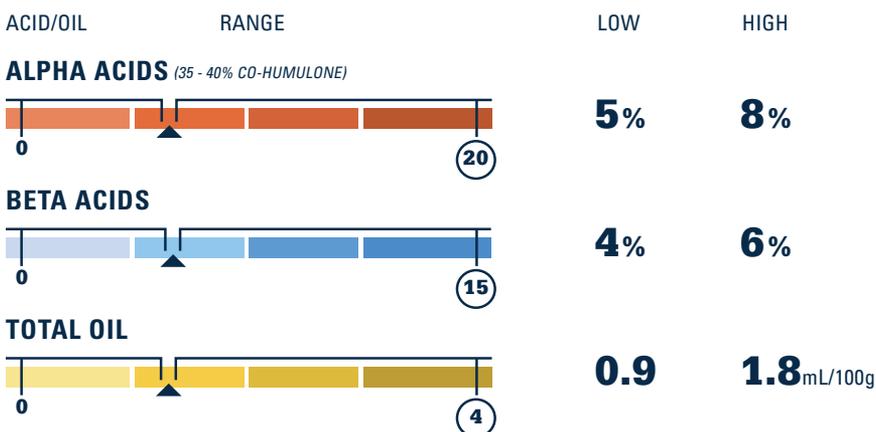
AROMA PROFILE

SPICY • LEMON

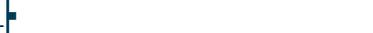
BEER STYLES

PILSNER • LAGER • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.5 - 0.9% OF TOTAL OIL	
MYRCENE	40 - 55% OF TOTAL OIL	
LINALOOL	0.3 - 0.5% OF TOTAL OIL	
CARYOPHYLLENE	10 - 15% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	20 - 35% OF TOTAL OIL	
GERANIOL	0.05 - 0.2% OF TOTAL OIL	
SELINENE		
OTHER	<1% - 28% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

KOHATU® BRAND



Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2011, Kohatu® is a descendant of Hallertau Mittelfrüh. It works well in single hop applications and is described as having intense fruit characteristics.

COUNTRY

NEW ZEALAND

AROMA PROFILE

TROPICAL FRUIT

BEER STYLES

PALE ALE • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

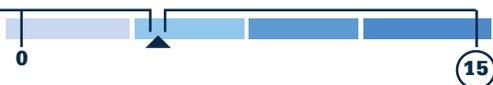
ALPHA ACIDS (21% CO-HUMULONE)



6%

7%

BETA ACIDS



4%

5%

TOTAL OIL



1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

36% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

11.5% OF TOTAL OIL

FARNESENE

0.3% OF TOTAL OIL

HUMULENE

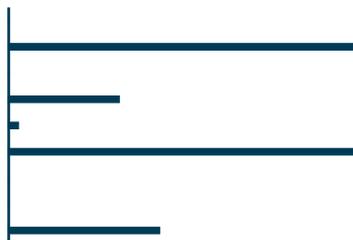
36.5% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

16 - 27% OF TOTAL OIL



YAKIMA CHIEF HOPS™

LIBERTY



Bred in 1983, Liberty is an extension of the Hallertau hop family. It is a half-sister to Ultra, Mt. Hood and Crystal. It displays mild floral and spice characteristics with some subtle citrus notes.

COUNTRY

UNITED STATES

AROMA PROFILE

**NOBLE • FLORAL • HERBAL
SPICY • DELICATE • LEMON**



BEER STYLES

PILSNER • BOCK • WHEAT • LAGER • KÖLSCH

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

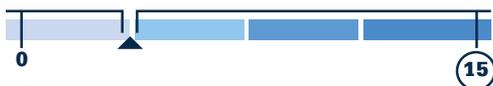
ALPHA ACIDS (22 - 25% CO-HUMULONE)



4%

5.5%

BETA ACIDS



3%

4%

TOTAL OIL



1

1.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.1 - 0.3% OF TOTAL OIL
MYRCENE	15 - 25% OF TOTAL OIL
LINALOOL	0.6 - 1% OF TOTAL OIL
CARYOPHYLLENE	10 - 15% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	35 - 45% OF TOTAL OIL
GERANIOL	0.1 - 0.3% OF TOTAL OIL
SELINENE	
OTHER	12 - 38% OF TOTAL OIL



YAKIMA CHIEF HOPS™

LORAL[®] BRAND



HBC 291 CV.

Developed by Hop Breeding Company and released in 2016, Loral[®] HBC 291 has a noble heritage that straddles the fence between old and new world hop aromatics. It has the ability to complement all beer styles, making it a very versatile hop in the brewery.

COUNTRY

UNITED STATES

AROMA PROFILE

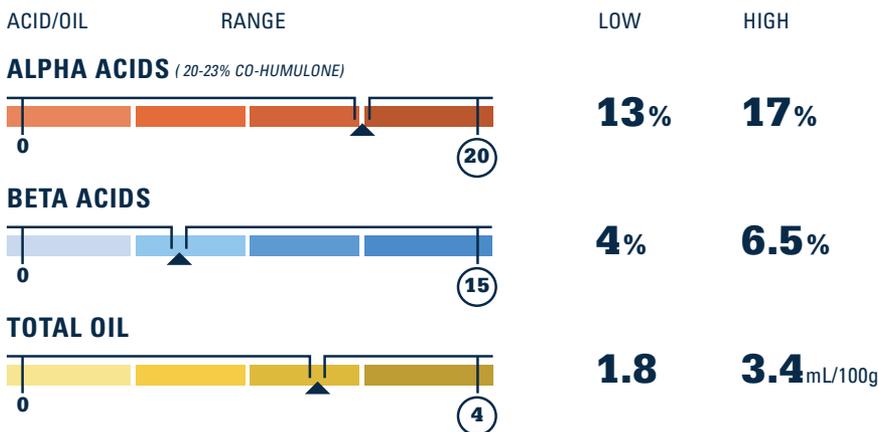
FLORAL • PEPPER • LEMON-CITRUS • DARK FRUIT



BEER STYLES

**IPA • AMERICAN PALE ALE • SAISON
BELGIAN-STYLE ALE • WHEAT • PILSNER**

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 0.7% OF TOTAL OIL
MYRCENE	52 - 58% OF TOTAL OIL
LINALOOL	1 - 1.1% OF TOTAL OIL
CARYOPHYLLENE	5 - 5.7% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	17.9% OF TOTAL OIL
GERANIOL	0.2 - 0.3% OF TOTAL OIL
SELINENE	
OTHER	15.3 - 22.4% OF TOTAL OIL



YAKIMA CHIEF HOPS[™]

MAGNUM



Bred at the Hop Research Center in Hüll in 1980 and released in 1993, Magnum is a German variety (also grown in the US) and daughter of Galena. It is a high alpha cultivar and is often used as the base bittering variety. Magnum does not display any distinct aroma characteristics, however, subtle spice and fruit characteristics have been noted by some brewers.

COUNTRY
UNITED STATES

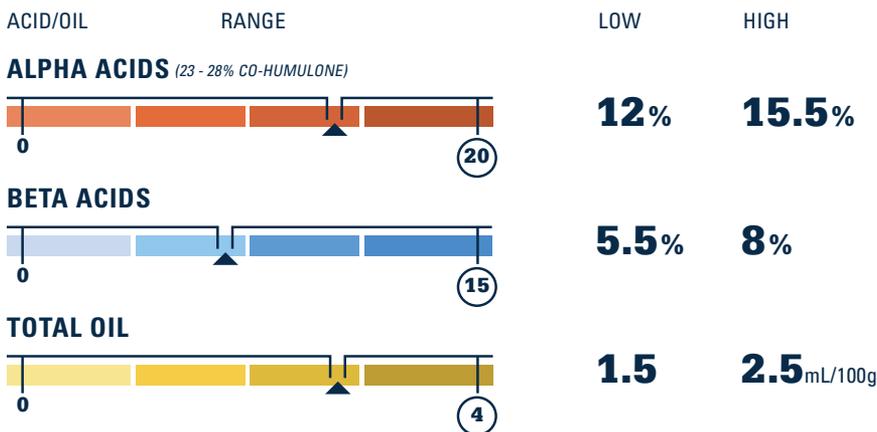
AROMA PROFILE
**SUBTLE SPICE & FRUIT
CLEAN BITTERING**



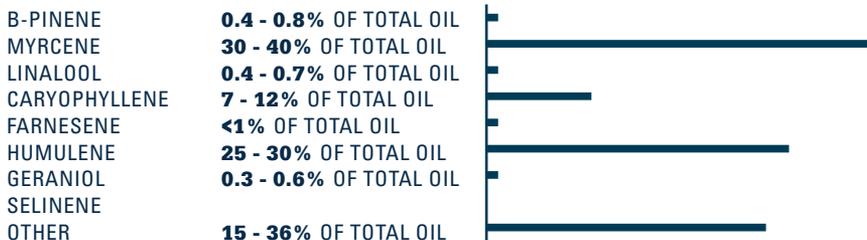
BEER STYLES

IPA • LAGER • PILSNER • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

MAGNUM



Bred at the Hop Research Center in Hüll in 1980 and released in 1993, Magnum is a daughter of Galena. It is a high alpha variety with some spice and fruit characteristics.

COUNTRY

GERMANY

AROMA PROFILE

APPLE • PEPPER

BEER STYLES

IPA • LAGER • PILSNER • STOUT

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (21 - 29% CO-HUMULONE)



11%

16%

BETA ACIDS



5%

7%

TOTAL OIL



1.6

2.6 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

30 - 45% OF TOTAL OIL

MYRCENE

0.2 - 0.3% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

8 - 12% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

30 - 45% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

<1% - 31% OF TOTAL OIL



YAKIMA CHIEF HOPS™

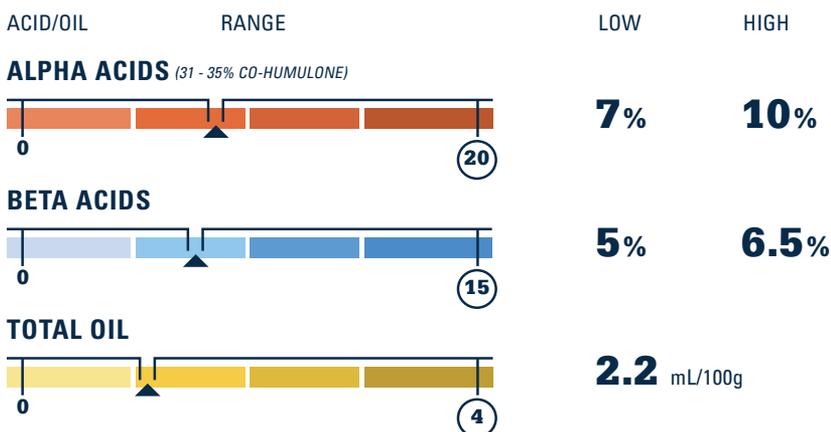
MANDARINA BAVARIA

Bred at the Hop Research Institute in Hüll and released in 2012, Mandarina Bavaria was commercialized as a new, German aroma variety in response to growing demand from the craft beer industry for distinct flavor profiles. It is the daughter of Cascade and displays many citrus characteristics, however, the most notable aroma is tangerine.

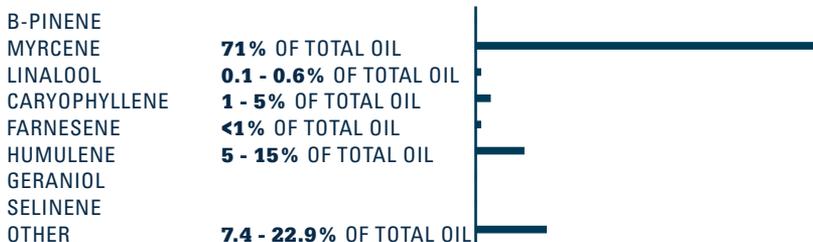
COUNTRY	AROMA PROFILE
GERMANY	TANGERINE • GRAPEFRUIT • LIME

BEER STYLES
IPA • SAISON

BREWING VALUES



TOTAL OIL BREAKDOWN



MERKUR



Bred at the Hop Research Institute in Hüll and registered in 2001, Merkur was the first mildew-resistant hop variety from the research center. It is a cross between Magnum and German experimental variety 81/8/13. It is a high alpha variety with low co-humulone oil percentages. In some dual purpose applications, Merkur displays subtle earth and citrus notes.

COUNTRY

GERMANY

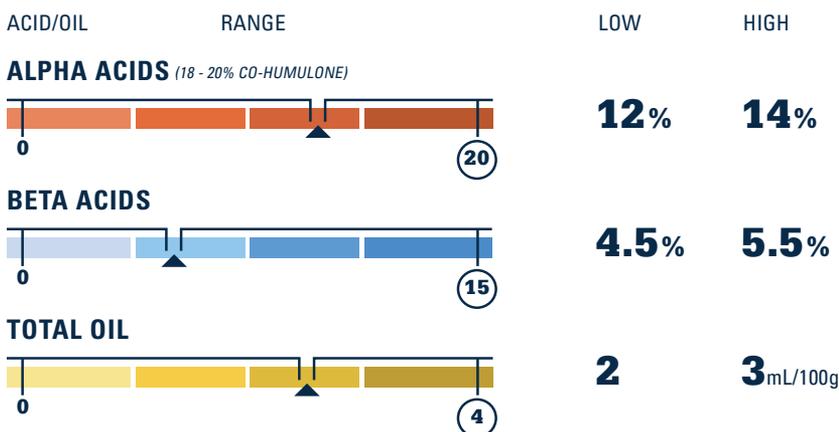
AROMA PROFILE

SUGAR • PINEAPPLE • MINT

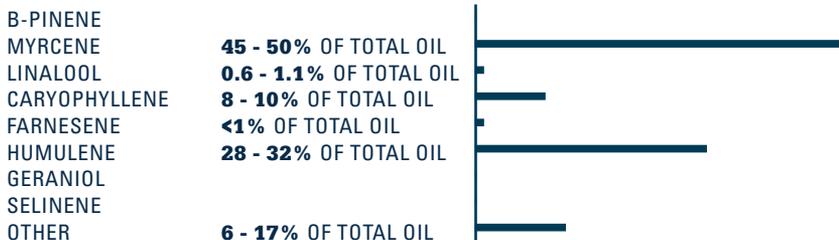
BEER STYLES

LAGER • PILSNER • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN



MILLENNIUM



Bred by the John I. Haas breeding program and released in 2000, Millennium is a super-alpha variety with mild herbal aromas. It is a descendant of Nugget.

COUNTRY

UNITED STATES

AROMA PROFILE

RESIN • HERBAL • FLORAL PEAR



BEER STYLES

ALE • BARLEY WINE • STOUT

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (29 - 35% CO-HUMULONE)



15.5% **18.5%**

BETA ACIDS



5% **6.5%**

TOTAL OIL



1.5 **3**_{mL/100g}

TOTAL OIL BREAKDOWN

B-PINENE	0.4 - 0.8% OF TOTAL OIL
MYRCENE	35 - 55% OF TOTAL OIL
LINALOOL	0.3 - 0.6% OF TOTAL OIL
CARYOPHYLLENE	8 - 10% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	15 - 25% OF TOTAL OIL
GERANIOL	0.1 - 0.3% OF TOTAL OIL
SELINENE	
OTHER	7 - 40% OF TOTAL OIL



YAKIMA CHIEF HOPS™

MITTELFRÜH



Despite being grown in regions throughout Germany, Mittelfrüh is commonly referred to as "Hallertau Mittelfrüh" as it was once the major Hallertau landrace variety. It is a classic German aroma hop associated with Bavarian-style lager beers, however, due to disease, acreage has been decreasing. Mittelfrüh is distinguished by an intense, pleasantly-harmonic bitterness.

COUNTRY

GERMANY

AROMA PROFILE

GRASS • TEA • CITRUS

BEER STYLES

LAGER • PILSNER • WHEAT • CASK-CONDITIONED ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

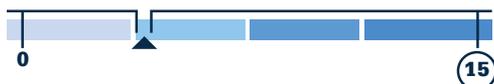
ALPHA ACIDS (18 - 28% CO-HUMULONE)



3%

5.5%

BETA ACIDS



3%

5%

TOTAL OIL



0.7

1.3 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

15.5% OF TOTAL OIL

MYRCENE

0.7 - 1.1% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

14.6% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

55.1% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

23 - 28% OF TOTAL OIL



YAKIMA CHIEF HOPS™

MOSAIC® BRAND



HBC 369 CV

Developed by Hop Breeding Company and released in 2012, Mosaic® HBC 369 cv. contains high alpha content and features a unique and complex aroma profile that translates favorably into a variety of beer styles. It is a daughter of Simcoe® YCR 14 cv. and a Nugget derived male. Mosaic® is named in honor of the artistic assortment of aromas and flavors it is capable of presenting.

COUNTRY
UNITED STATES

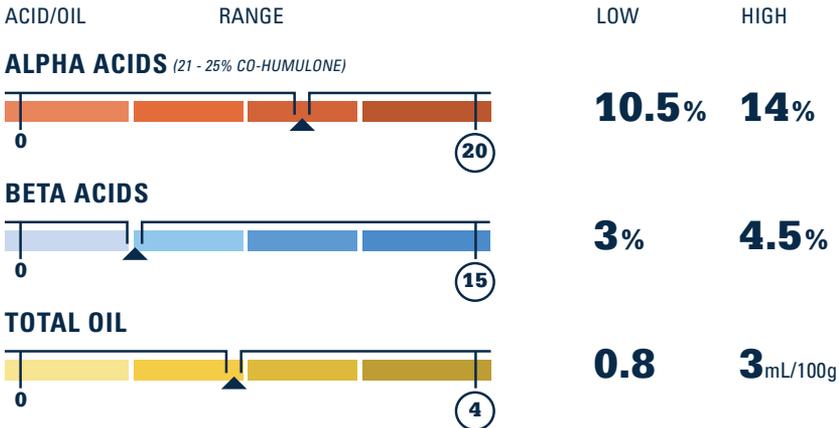
AROMA PROFILE
**BLUEBERRY • TANGERINE
PAPAYA • ROSE • BLOSSOM
BUBBLE GUM**



BEER STYLES

PALE ALE • IPA • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 1% OF TOTAL OIL	
MYRCENE	48 - 55% OF TOTAL OIL	
LINALOOL	0.4 - 0.8% OF TOTAL OIL	
CARYOPHYLLENE	3 - 8% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	10 - 15% OF TOTAL OIL	
GERANIOL	0.5 - 0.9% OF TOTAL OIL	
SELINENE		
OTHER	18 - 37% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

MOTUEKA™ BRAND



87.14-20

Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1996, Motueka™ is a cross between a New Zealand breeding selection and Saaz. It offers a unique aroma and flavor profile suitable for producing big beer styles. Motueka™ performs well when used in multiple additions from a single hop bill.

COUNTRY

NEW ZEALAND

AROMA PROFILE

LIME • LEMON • TROPICAL FRUIT

BEER STYLES

ENGLISH-STYLE ALE • LAGER • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

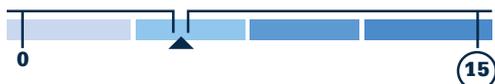
ALPHA ACIDS (29% CO-HUMULONE)



6.5%

7.5%

BETA ACIDS



5%

5.5%

TOTAL OIL



0.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

47 - 48% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

2% OF TOTAL OIL

FARNESENE

12.2% OF TOTAL OIL

HUMULENE

3.6% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

34 - 37% OF TOTAL OIL



YAKIMA CHIEF HOPS™

MT. HOOD



Bred in 1983 and released from the USDA breeding program in Oregon in 1989, Mt. Hood is a triploid aroma-type cultivar with similarities to German Hallertau and German Hersbrucker. It is named after the famous Oregon volcano.

COUNTRY
UNITED STATES

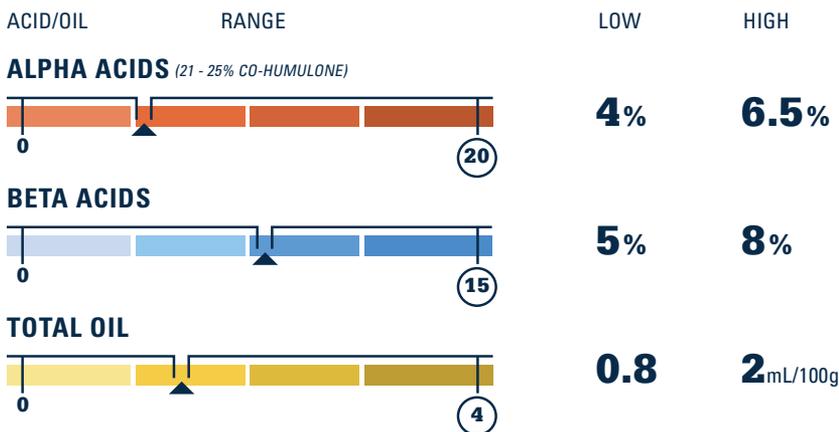
AROMA PROFILE
PUNGENT



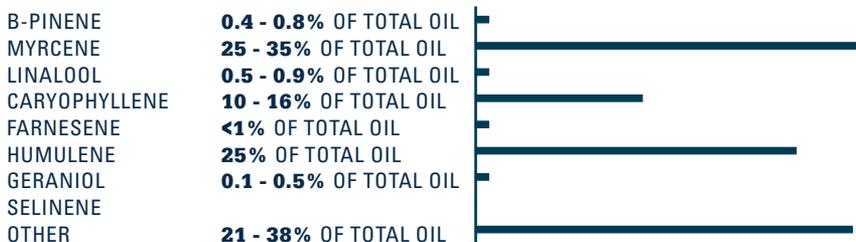
BEER STYLES

LAGER • ALTBIER • BOCK • HELLES • WHEAT

BREWING VALUES



TOTAL OIL BREAKDOWN



MT. RAINIER



Bred by Oregon State University, Mt. Rainier is a dual purpose variety with noble aroma characteristics. It is similar to the classic German variety, Hallertau Mittelfrüh, but features more bittering strength.

COUNTRY
UNITED STATES

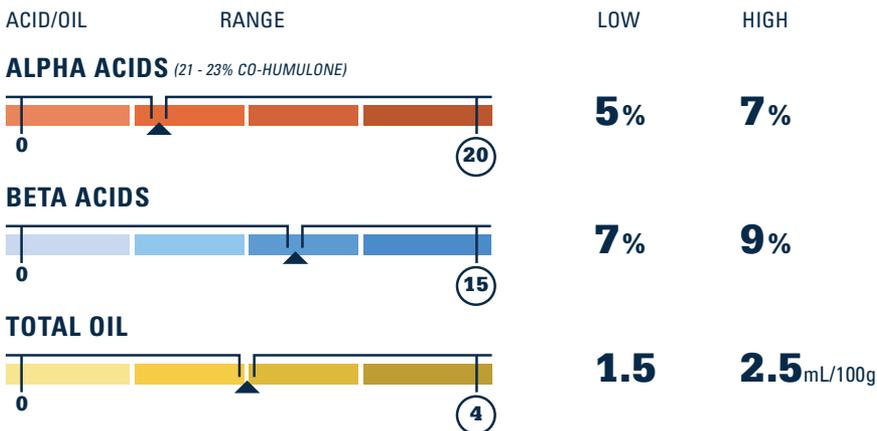
AROMA PROFILE
NOBLE • LICORICE • FLORAL



BEER STYLES

AMERICAN-STYLE ALE • LAGER • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 0.8% OF TOTAL OIL	
MYRCENE	50 - 60% OF TOTAL OIL	
LINALOOL	0.6 - 0.9% OF TOTAL OIL	
CARYOPHYLLENE	6 - 10% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	15 - 20% OF TOTAL OIL	
GERANIOL	0.2 - 0.4% OF TOTAL OIL	
SELINENE		
OTHER	7 - 27% OF TOTAL OIL	



NELSON SAUVIN™ BRAND

85-03-06

Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2000, Nelson Sauvini™ is a triploid variety bred from the New Zealand Smoothcone and a selected New Zealand male. It is known for being one of the most unique hop varieties, displaying strong fruit and white wine aroma characteristics.

COUNTRY

NEW ZEALAND

AROMA PROFILE

WHITE WINE • GOOSEBERRY • GRAPE SAUVIGNON BLANC

BEER STYLES

LAGER • PALE ALE • IPA

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

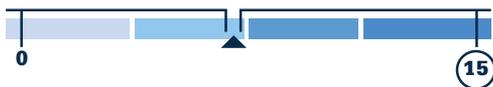
ALPHA ACIDS (24% CO-HUMULONE)



12%

13%

BETA ACIDS



6%

8%

TOTAL OIL



1.1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

22% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

10.7% OF TOTAL OIL

FARNESENE

0.4% OF TOTAL OIL

HUMULENE

36.4% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

31 - 41% OF TOTAL OIL



YAKIMA CHIEF HOPS™

NEWPORT



Bred in 1992 by Oregon State University and released in 1992 through the USDA, Newport is a descendant of the classic bittering variety, Magnum. It contains high alpha acid, co-humulone and myrcene content, offering more distinct aroma characteristics than its parent.

COUNTRY
UNITED STATES

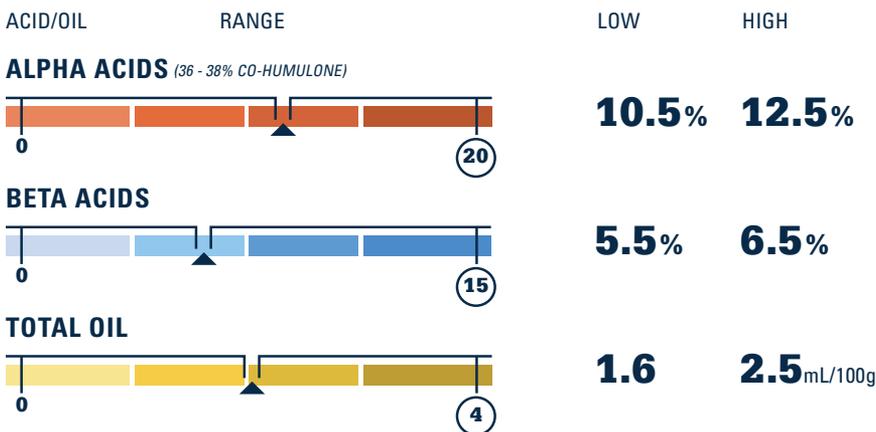
AROMA PROFILE
WINE • BALSAMIC



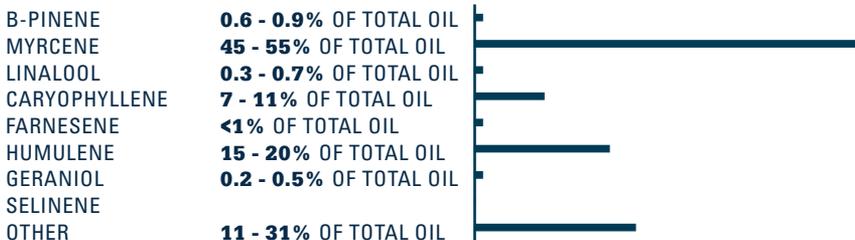
BEER STYLES

**BARLEY WINE • STOUT
AMERICAN-STYLE ALE**

BREWING VALUES



TOTAL OIL BREAKDOWN



NORTHDOWN



Bred at Wye College in 1970, Northdown is a cross between Northern Brewer and a German male. It is known for its fresh, yet rich flavor.

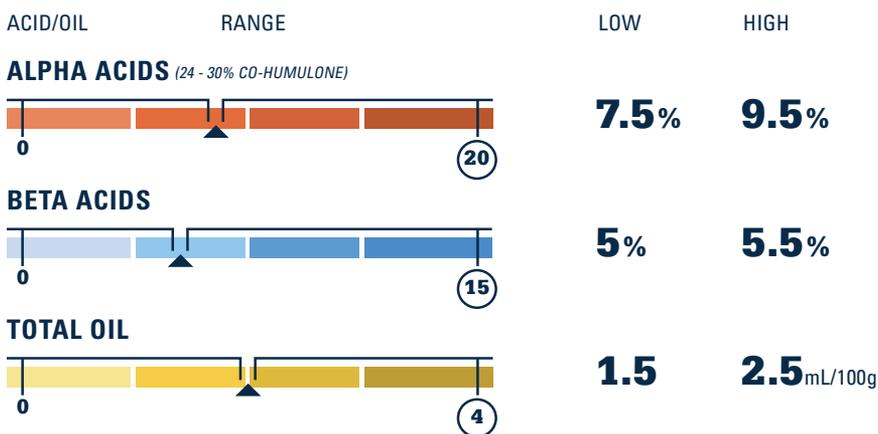
COUNTRY
UNITED KINGDOM

AROMA PROFILE
FLORAL • PINE • CEDAR • BERRY

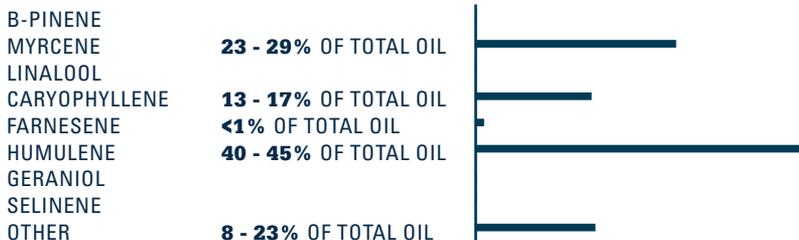
BEER STYLES

PORTER • ALE • LAGER • BARLEY WINE • STOUT • BOCK

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

NORTHERN BREWER

Bred in England in 1934 from a Canterbury Golding plant and male seedling of Brewer's Gold, Northern Brewer is mainly grown in the United States and Germany. US Northern Brewer contains slightly higher alpha acids and high myrcene oil content resulting in herbal, wood and peppery aroma characteristics; it is suitable for any stage of the brewing process.

COUNTRY
UNITED STATES

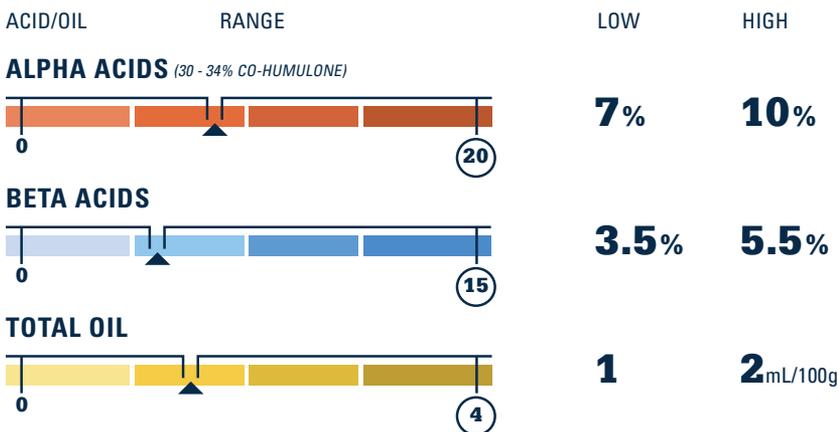
AROMA PROFILE
EVERGREEN • WOOD • MINT



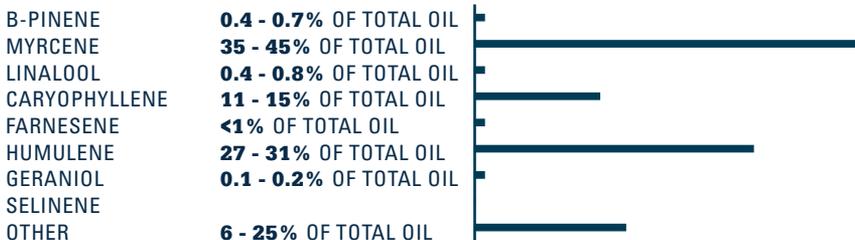
BEER STYLES

ENGLISH-STYLE BITTER • PORTER
ENGLISH-STYLE PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

NORTHERN BREWER

Originally bred in England in 1934, Northern Brewer is a cross between Canterbury Golding and a male seedling of Brewer's Gold. It was originally grown in the North of England, but has become one of the main varieties in the Hallertau region of Germany. Northern Brewer displays pleasant pine and mint characteristics in dual purpose brewing applications.

COUNTRY

GERMANY

AROMA PROFILE

MINT • PINE • GRASS

BEER STYLES

PORTER • ENGLISH-STYLE BITTER • ENGLISH-STYLE PALE ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

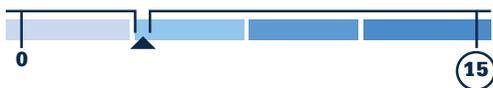
ALPHA ACIDS (27 - 32% CO-HUMULONE)



6%

10%

BETA ACIDS



3%

5%

TOTAL OIL



1

1.6 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

25 - 45% OF TOTAL OIL

MYRCENE

0.3 - 0.8% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

10 - 20% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

35 - 50% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

<1% - 29% OF TOTAL OIL



YAKIMA CHIEF HOPS™

NUGGET



Bred in 1970 by the USDA breeding program in Oregon and released in 1983, Nugget is a high alpha cultivar that is beginning to gain some acceptance as a dual purpose variety. Its lineage includes Brewer's Gold, Canterbury Golding and Early Green.

COUNTRY
UNITED STATES

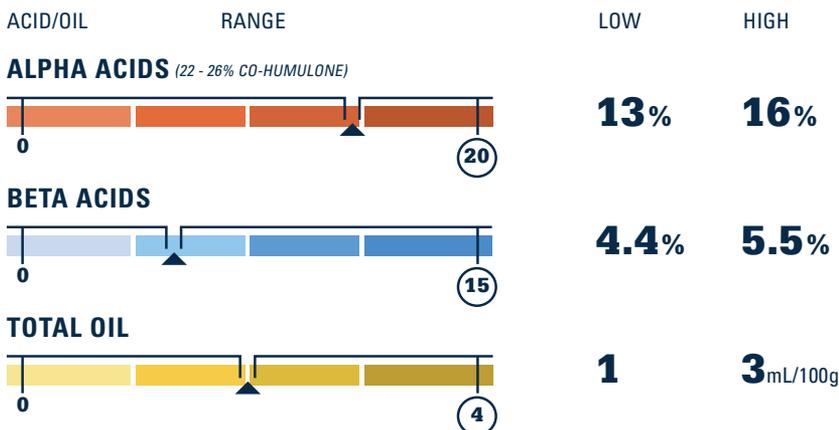
AROMA PROFILE
GREEN • WOOD • GINGER



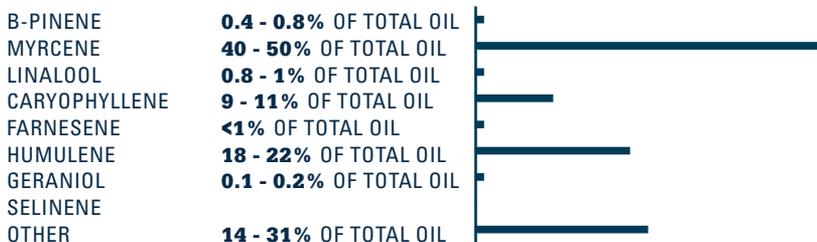
BEER STYLES

LAGER • PILSNER • PALE ALE • ESB

BREWING VALUES



TOTAL OIL BREAKDOWN



OLYMPIC



Released for commercial production in 1983, Olympic is a descendant of Brewer's Gold, Fuggle and East Kent Golding. It is primarily used as a bittering hop, however some subtle citrus and spice aroma characteristics have been noted.

COUNTRY
UNITED STATES

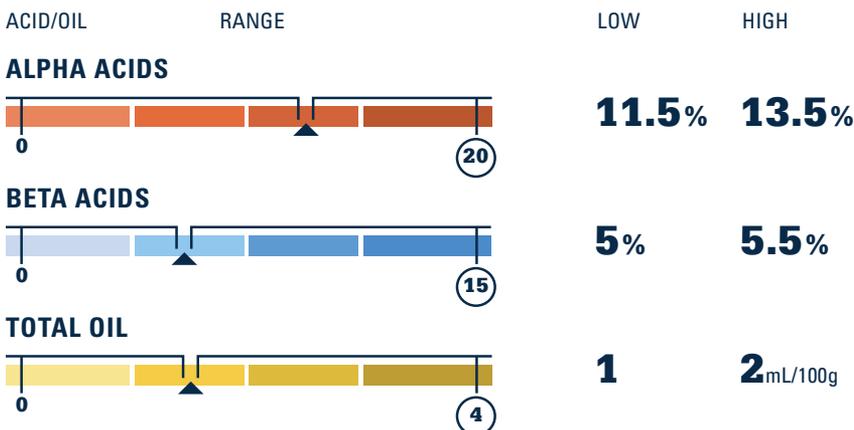
AROMA PROFILE
CITRUS • SPICY



BEER STYLES

AMERICAN-STYLE ALE • PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 1% OF TOTAL OIL	
MYRCENE	45 - 55% OF TOTAL OIL	
LINALOOL	0.4 - 0.7% OF TOTAL OIL	
CARYOPHYLLENE	7 - 12% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	9 - 13% OF TOTAL OIL	
GERANIOL	0.6 - 1% OF TOTAL OIL	
SELINENE		
OTHER	16 - 36% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

OPAL



Bred at the Hop Research Institute in Hüll, Opal is a daughter of Hallertau Gold. It is specifically known for its sweet and spicy characteristics, providing subtle pepper and clean citrus flavors.

COUNTRY

GERMANY

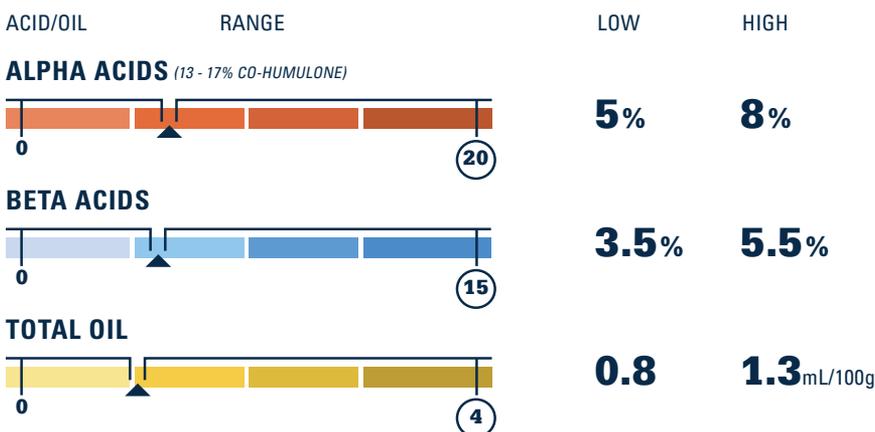
AROMA PROFILE

SWEET SPICE • PEPPER • CLEAN CITRUS • ANISE

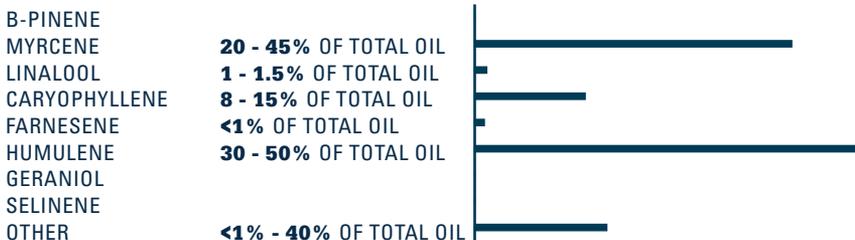
BEER STYLES

BELGIAN-STYLE ALE • WHEAT • SUMMER ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS

ORION



Orion is a cross between German Perle and 70/10/15M; it is a half-sister to Challenger. Acreage and availability are limited.

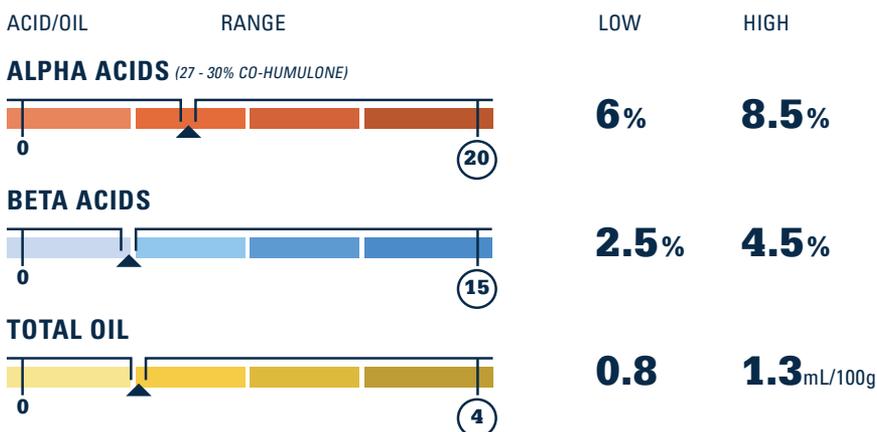
COUNTRY
GERMANY

AROMA PROFILE
SPICY

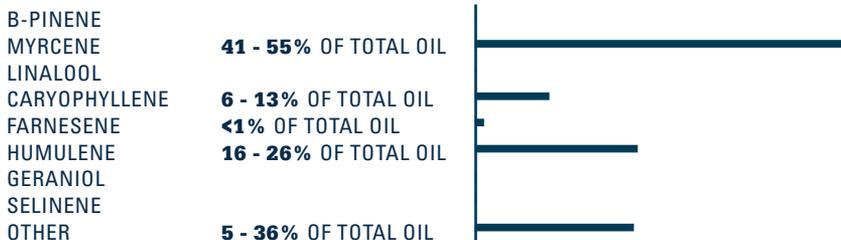
BEER STYLES

HELLES • DUNKEL • GERMAN-STYLE ALE • LAGER • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

PACIFIC CREST



TRI2302 BLEND

This blend connects the classic noble varieties with an American influence. Bringing together grassy, earthy and tobacco characteristics with mild floral, spicy, herbal and pine. Pacific Crest works well in Pilsner, Lager and Pale Ales.

COUNTRY

UNITED STATES

AROMA PROFILE

**FLORAL • EARTHY • GRASS
SPICY • HERBAL**

BEER STYLES

PILSNER • LAGER • BLONDE ALE • PALE ALE

REPLACEMENT FOR

SAAZ • FUGGLE • TETTNANG



BREWING VALUES

ACID/OIL

RANGE

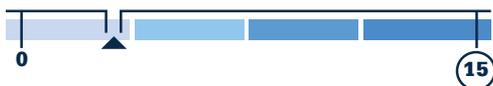
PERCENTAGE

ALPHA ACIDS (27.9% CO-HUMULONE)



3.9%

BETA ACIDS



3.0%

TOTAL OIL



0.5 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.5% OF TOTAL OIL
MYRCENE	26.4% OF TOTAL OIL
LINALOOL	0.8% OF TOTAL OIL
CARYOPHLENE	9.7% OF TOTAL OIL
FARNESENE	8.4% OF TOTAL OIL
HUMULENE	23.8% OF TOTAL OIL
GERANIOL	0.6% OF TOTAL OIL
SELINENE	
OTHER	29.8% OF TOTAL OIL



YAKIMA CHIEF HOPS™

PACIFIC GEM



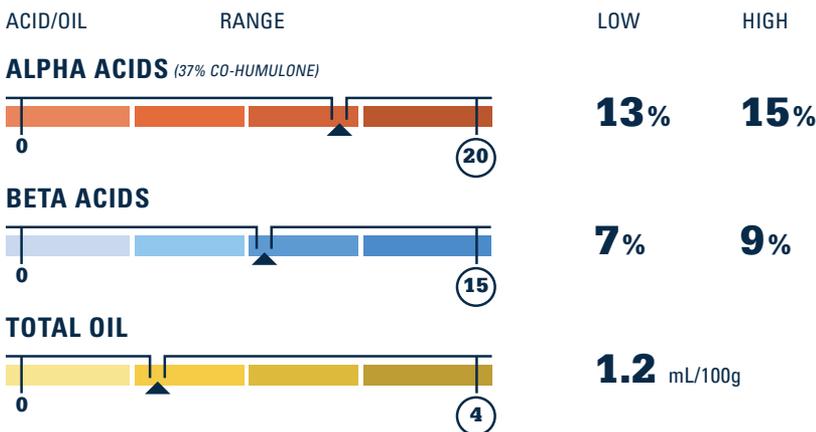
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1987, Pacific Gem is a triploid alpha variety from New Zealand Smoothcone crossed with Californian Late Cluster and Fuggle. It is typically used as a first hop addition for bittering purposes, but is known for showcasing wood and blackberry flavors.

COUNTRY
NEW ZEALAND

AROMA PROFILE
BLACKBERRY • OAK

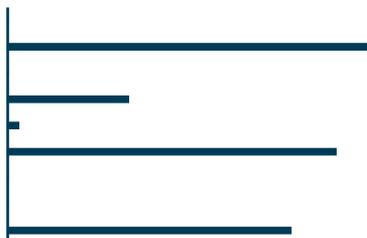
BEER STYLES
LAGER • PORTER • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	33.3% OF TOTAL OIL
MYRCENE	
LINALOOL	
CARYOPHYLLENE	11% OF TOTAL OIL
FARNESENE	0.3% OF TOTAL OIL
HUMULENE	29.9% OF TOTAL OIL
GERANIOL	
SELINENE	
OTHER	26% OF TOTAL OIL



PACIFIC JADE™ BRAND

HORT1524

Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2004, Pacific Jade™ is a cross of New Zealand First Choice (a relative of the Late Cluster) and a Saaz male. It is suited for use as a bittering hop but also delivers bold citrus and spice aroma characteristics.

COUNTRY

NEW ZEALAND

AROMA PROFILE

FRESH CITRUS • BLACK PEPPER

BEER STYLES

ALE • LAGER • PORTER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (24% CO-HUMULONE)



12%

14%

BETA ACIDS



7%

8%

TOTAL OIL



1.4

mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

33.3% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

10.2% OF TOTAL OIL

FARNESENE

0.3% OF TOTAL OIL

HUMULENE

32.9% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

24% OF TOTAL OIL



YAKIMA CHIEF HOPS™

PACIFICA™ BRAND



77-01

Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1993, Pacifica™ was bred through open pollination of Hallertau Mittelfrüh. It displays classic Hallertau citrus and floral aroma characters but brings a blend of new and old-world taste descriptors to the brewers' forum.

COUNTRY

NEW ZEALAND

AROMA PROFILE

ORANGE ZEST • MARMALADE

BEER STYLES

LAGER • PALE ALE • IPA

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (25% CO-HUMULONE)



5%

6%

BETA ACIDS



6%

TOTAL OIL



1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

12.5% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

16.7% OF TOTAL OIL

FARNESENE

0.2% OF TOTAL OIL

HUMULENE

50.9% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

19% OF TOTAL OIL



YAKIMA CHIEF HOPS™

PAHTO™ BRAND



HBC 682 CV

Pahto™ is a super alpha hop that consistently delivers a clean and smooth canvas of bitterness for the boil. The Pahto story is every bit as refreshing. Snow melt from Pahto (the native name for Mt. Adams) and the neighboring Cascades provides irrigation for farms and ranches throughout the Yakima Valley.

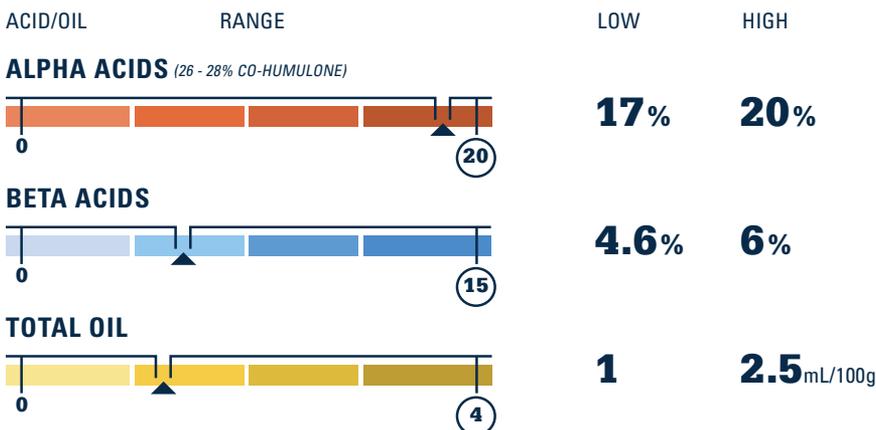
COUNTRY
UNITED STATES

AROMA PROFILE
HERBAL • EARTHY • FLORAL



BEER STYLES
IPA • PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.5 - 1% OF TOTAL OIL	
MYRCENE	58 - 72% OF TOTAL OIL	
LINALOOL	0.4 - 0.6% OF TOTAL OIL	
CARYOPHYLLENE	3.7 - 5.6% OF TOTAL OIL	
FARNESENE	0.1 - 0.2% OF TOTAL OIL	
HUMULENE	8 - 11% OF TOTAL OIL	
GERANIOL	0.1 - 0.2% OF TOTAL OIL	
SELINENE		
OTHER	9.4 - 29.1% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

PALISADE® BRAND



YCR 4 CV

Developed by Yakima Chief Ranches, Palisade® YCR 4 cv. is known for its high yield and unique aroma profile. With moderate alpha acid, Palisade® borders on being a dual purpose hop, however, more complex characteristics are seen in later additions.

COUNTRY

UNITED STATES

AROMA PROFILE

APRICOT • GRASS • CLEAN FLORAL



BEER STYLES

AMERICAN-STYLE ALE • ENGLISH-STYLE ALE LAGER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

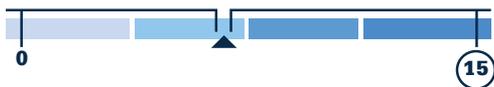
ALPHA ACIDS (26 - 28% CO-HUMULONE)



6.5%

10%

BETA ACIDS



5.5%

8%

TOTAL OIL



0.8

2_{mL}/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 0.8% OF TOTAL OIL
MYRCENE	45 - 55% OF TOTAL OIL
LINALOOL	0.4 - 0.6% OF TOTAL OIL
CARYOPHYLLENE	8 - 16% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	10 - 20% OF TOTAL OIL
GERANIOL	0.1 - 0.5% OF TOTAL OIL
SELINENE	
OTHER	6 - 35% OF TOTAL OIL



YAKIMA CHIEF HOPS™

PEKKO® BRAND



ADHA 871

Pekko® is named for the Finnish God of Field and Crops. Pekko's® complex and clean characteristics of floral, citrus, and mint lend itself to many different styles of beer.

COUNTRY

UNITED STATES

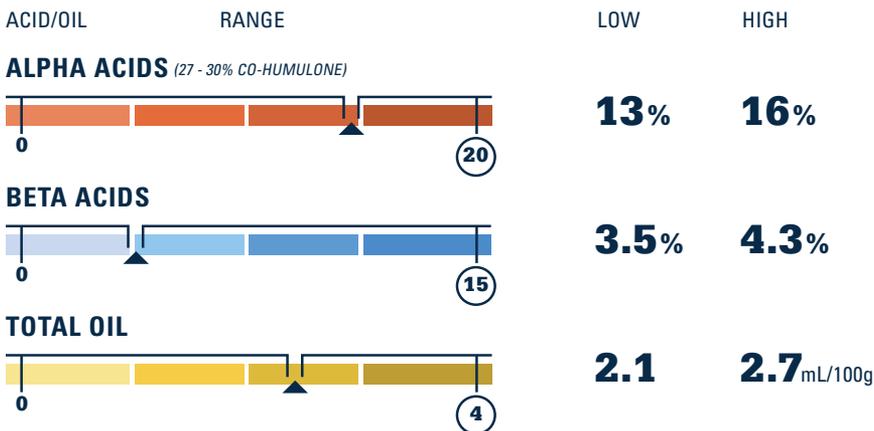
AROMA PROFILE

**CLEAN • FLORAL • MELON • PINEAPPLE • PEAR
SAAZ-LIKE • CUCUMBER • MINT • HERBAL
SAGE • LEMON**

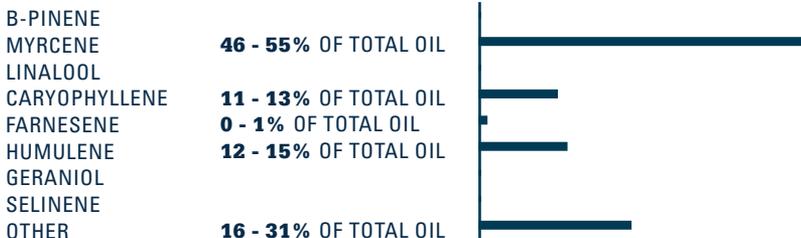
BEER STYLES

ALL STYLES

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

PERLE



Bred at the Hop Research Institute in Hüll and released in 1978, Perle is a cross between Northern Brewer and 63/5/27M. It is tolerant to most diseases and is grown in both Germany and the United States. Perle is known for adding a traditional, German-like quality to beer.

COUNTRY
UNITED STATES

AROMA PROFILE
SPICY • FLORAL



BEER STYLES

WHEAT • LAGER • KÖLSCH • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

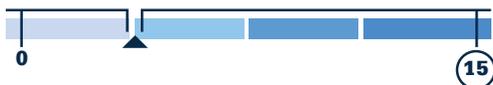
ALPHA ACIDS (28 - 31% CO-HUMULONE)



6%

9%

BETA ACIDS



3%

4.5%

TOTAL OIL

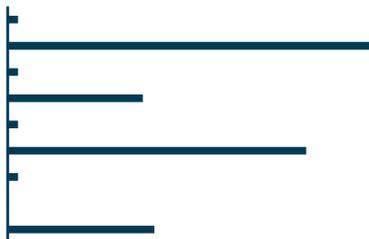


0.8

2_{mL/100g}

TOTAL OIL BREAKDOWN

B-PINENE	0.3 - 0.6% OF TOTAL OIL
MYRCENE	30 - 45% OF TOTAL OIL
LINALOOL	0.3 - 0.8% OF TOTAL OIL
CARYOPHYLLENE	12 - 16% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	28 - 34% OF TOTAL OIL
GERANIOL	0.2 - 0.4% OF TOTAL OIL
SELINENE	
OTHER	2 - 28% OF TOTAL OIL



YAKIMA CHIEF HOPS™

PERLE



Bred at the Hop Research Institute in Hüll and released in 1978, Perle is a descendant of Northern Brewer. It demonstrates good tolerance to most diseases, being grown in Germany and the United States.

COUNTRY

GERMANY

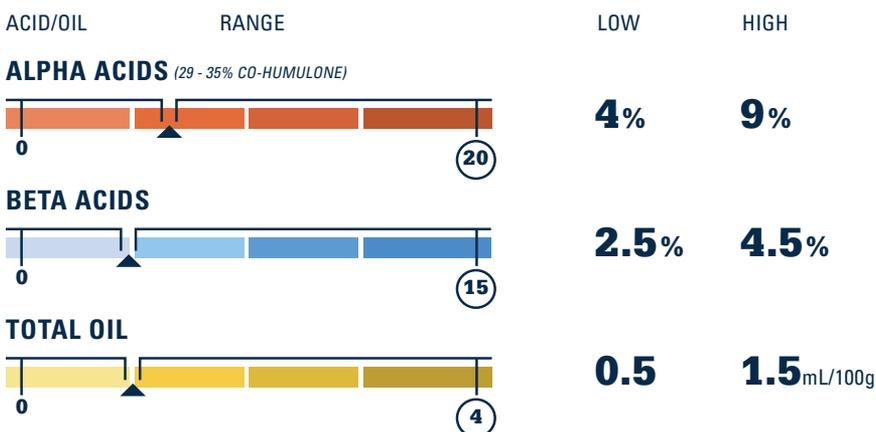
AROMA PROFILE

MINT • TEA • PEPPER

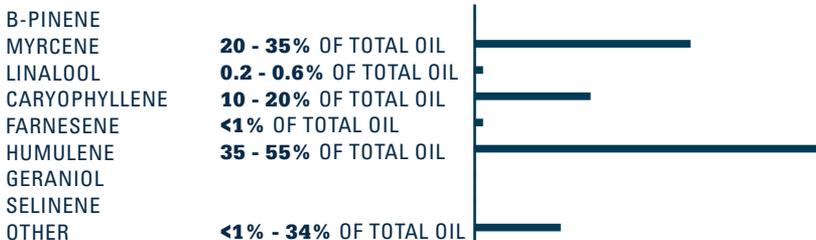
BEER STYLES

WHEAT • LAGER • KÖLSCH • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN



PHOENIX



Bred at Wye College and released in 1996, Phoenix is a seedling of Yeoman. In brewing trials, Phoenix has produced excellent results in both bittering and flavor applications.

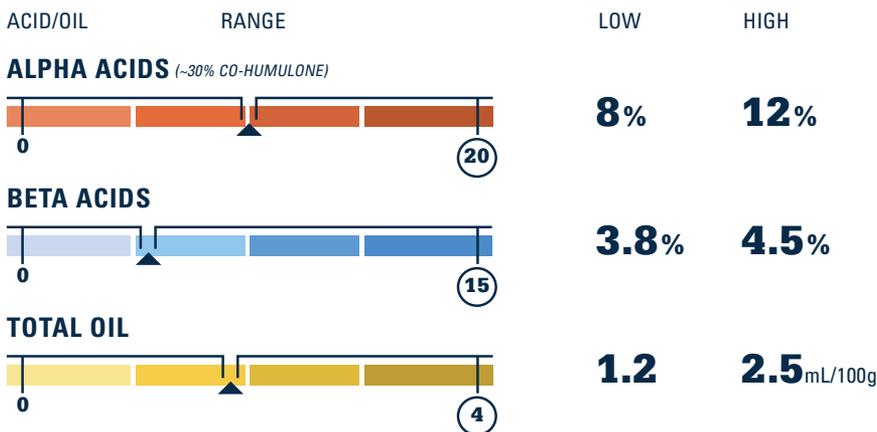
COUNTRY
**UNITED
KINGDOM**

AROMA PROFILE
SPICY • FLORAL • CHOCOLATE

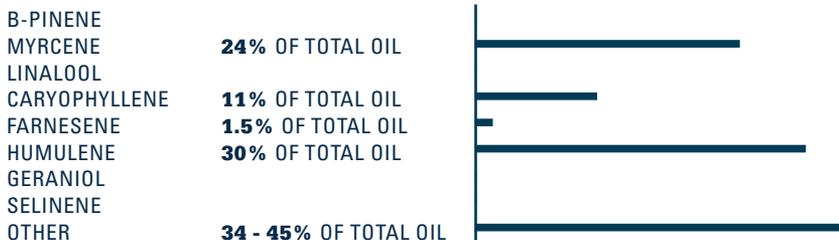
BEER STYLES

**ENGLISH-STYLE BITTER • PALE ALE • STOUT • HELLES
LAGER • SAISON**

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

PILGRIM



Bred at Wye College in the late 1990s and released in 2001, Pilgrim is half-sister to First Gold and sister to Herald. It is often compared to Target. Pilgrim's selinene content helps enhance brewing performance and produce a "hoppier" aroma.

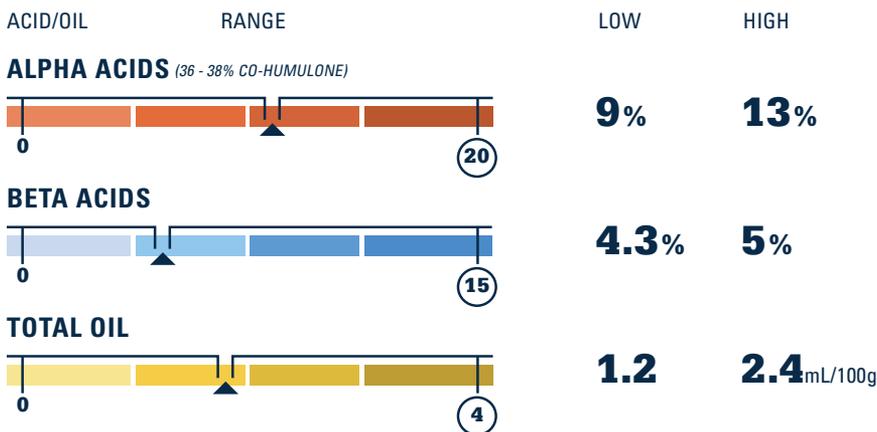
COUNTRY
**UNITED
KINGDOM**

AROMA PROFILE
LEMON • GRAPEFRUIT • PEAR • BERRY

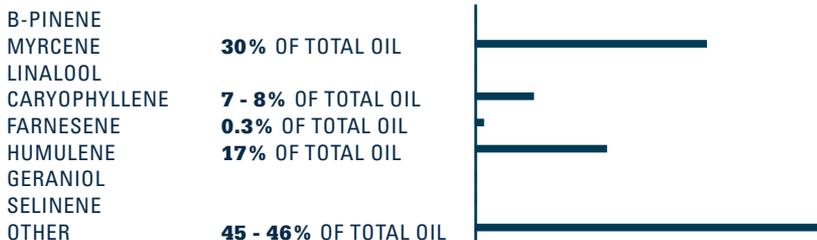
BEER STYLES

ALE • WHEAT • STOUT • HELLES • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

PILOT



Bred at Wye College and released in 2001, Pilot is a result of open pollination of Pioneer. It is known for its distinct marmalade flavor and complete aroma profile being distinctively different than other UK varieties.

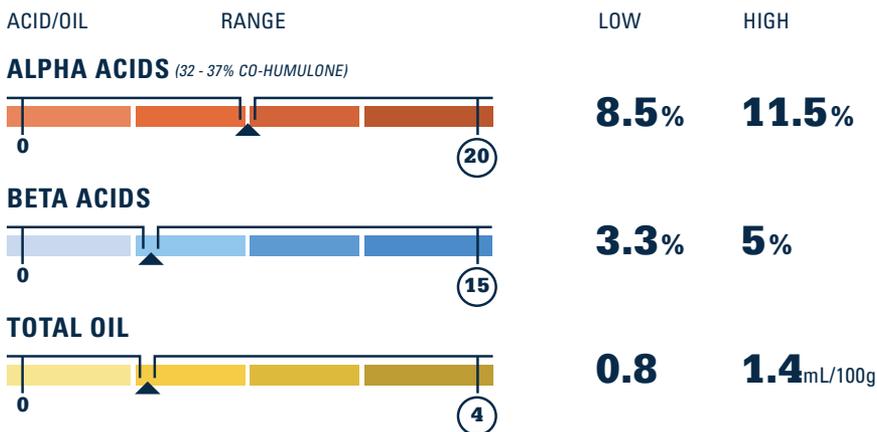
COUNTRY
UNITED KINGDOM

AROMA PROFILE
MARMALADE • LEMON • SPICE

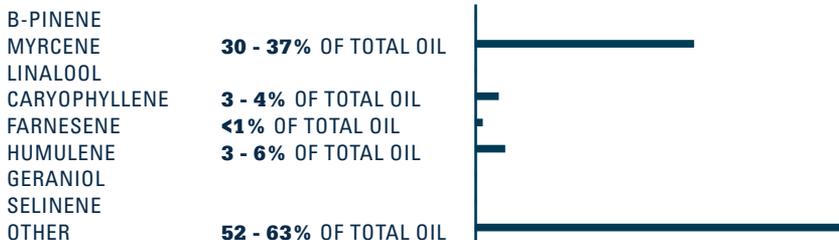
BEER STYLES

AMERICAN-STYLE ALE • ENGLISH-STYLE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

PIONEER



Bred at Wye College and released in 1996, Pioneer is a sister to Herald. It displays a distinctly “hoppy” aroma with crisp and refreshing bittering characteristics.

COUNTRY

UNITED KINGDOM

AROMA PROFILE

LEMON • GRAPEFRUIT • CEDAR • HERBAL

BEER STYLES

ENGLISH-STYLE BITTER • ENGLISH-STYLE ALE • RED ALE

BREWING VALUES

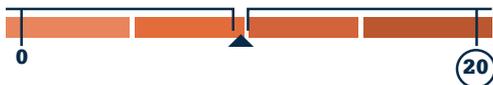
ACID/OIL

RANGE

LOW

HIGH

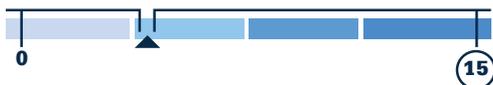
ALPHA ACIDS (33 - 40% CO-HUMULONE)



8.5%

11.4%

BETA ACIDS



3.2%

4.9%

TOTAL OIL



1.5

2.3 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

28 - 42% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

6 - 9% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

16 - 24% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

24 - 49% OF TOTAL OIL



YAKIMA CHIEF HOPS™

POLARIS



Bred at the Hop Research Institute in Hüll and released in 2012, Polaris was commercialized as a new, German variety in response to growing demand from the craft beer industry for distinct flavor profiles. It features extremely high alpha content along with intense mint flavors.

COUNTRY

GERMANY

AROMA PROFILE

MINT • PINEAPPLE • MENTHOL

BEER STYLES

STOUT • IPA • DOUBLE IPA

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

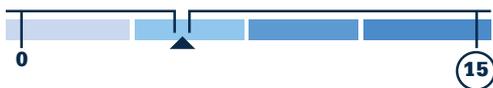
ALPHA ACIDS (22 - 28% CO-HUMULONE)



18%

23%

BETA ACIDS



4.5%

6%

TOTAL OIL



4

5 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

50% OF TOTAL OIL

MYRCENE

0.1 - 0.4% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

8 - 13% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

20 - 35% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

1 - 21% OF TOTAL OIL



YAKIMA CHIEF HOPS™

PREMIANT



Bred from Saaz and released in 1996, Premiant has a relatively high alpha content for Czech varieties. As a result, it has found some application as a dual purpose variety.

COUNTRY

**CZECH
REPUBLIC**

AROMA PROFILE

PLEASANT • MILD

BEER STYLES

ALE • LAGER • SAISON

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

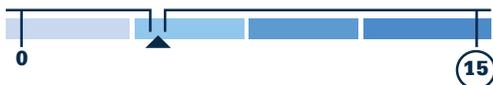
ALPHA ACIDS (18 - 23% CO-HUMULONE)



7%

10%

BETA ACIDS



3.5%

5.5%

TOTAL OIL



1

2 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

0.4 - 0.7% OF TOTAL OIL

MYRCENE

30 - 45% OF TOTAL OIL

LINALOOL

0.4 - 0.7% OF TOTAL OIL

CARYOPHYLLENE

9 - 13% OF TOTAL OIL

FARNESENE

1 - 3% OF TOTAL OIL

HUMULENE

25 - 40% OF TOTAL OIL

GERANIOL

0.02 - 0.1% OF TOTAL OIL

SELINENE

<1% - 34% OF TOTAL OIL

OTHER

<1% - 34% OF TOTAL OIL



YAKIMA CHIEF HOPS™

PRIDE OF RINGWOOD

Bred in 1953 and commercially grown since the 1960s. One of Australia's most known and utilized hop varieties. Predominantly used for early kettle additions.

COUNTRY

AUSTRALIA

AROMA PROFILE

CEDAR • OAK

BEER STYLES

LAGER • PALE ALE

BREWING VALUES

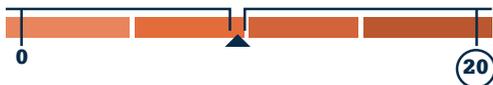
ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (26 - 34% CO-HUMULONE)



8.6%

10.5%

BETA ACIDS



4.4%

7%

TOTAL OIL



1.6

1.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

24 - 41% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

9 - 14% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

2 - 4% OF TOTAL OIL

GERANIOL

SELINENE

19 - 30% OF TOTAL OIL

OTHER

10 - 45% OF TOTAL OIL



YAKIMA CHIEF HOPS™

PROGRESS



Bred at Wye College in 1951 and released in 1964, Progress is a cross between WGV (Whitbread Golding Variety) and a wild, American male hop. It was originally introduced as an alternative to Fuggle, but showcases a slightly sweeter aroma.

COUNTRY

UNITED KINGDOM

AROMA PROFILE

**GRASS • SWEET • MINT • HONEY
BLACKCURRANT**

BEER STYLES

**ENGLISH-STYLE ALE • PORTER • STOUT
ENGLISH-STYLE BITTER**

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

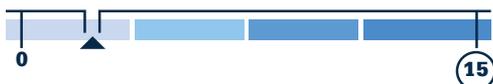
ALPHA ACIDS (25 - 30% CO-HUMULONE)



6%

7.5%

BETA ACIDS



2%

2.7%

TOTAL OIL



0.5

0.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

24 - 28% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

12 - 15% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

40 - 47% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

9 - 23% OF TOTAL OIL



YAKIMA CHIEF HOPS™

RAKAU™ BRAND



70-4-9

Re-released in 2007 from the New Zealand hop breeding program, Rakau™ is often described as “the whole orchard.” It is often used in New World styles where brash fruity character and big but well constructed bitterness is desired. Rakau™ performs best when used in combination of late additions and dry hopping.

COUNTRY

NEW ZEALAND

AROMA PROFILE

**STONE FRUIT • FIG • APRICOT • RESIN
PINE NEEDLE**

BEER STYLES

IPA • LAGER • PALE ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

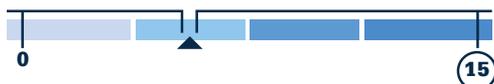
ALPHA ACIDS (24% CO-HUMULONE)



10%

11%

BETA ACIDS



5%

6%

TOTAL OIL



2.2 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

56% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

5.2% OF TOTAL OIL

FARNESENE

4.5% OF TOTAL OIL

HUMULENE

16.3% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

18% OF TOTAL OIL



YAKIMA CHIEF HOPS™

RIWAKA™ BRAND



85.6-23

Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1996, Riwaka™ is a triploid aroma variety bred from “Old Line” Saaz and New Zealand breeding selections. It is a quintessential New Zealand variety. Riwaka™ is a bold, fruity hop that is best suited for IPA and Imperial beer styles.

COUNTRY

NEW ZEALAND

AROMA PROFILE

GRAPEFRUIT • CITRUS

BEER STYLES

IPA • DOUBLE IPA • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

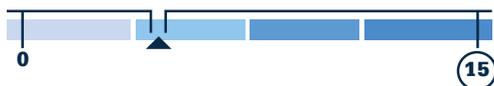
ALPHA ACIDS (32% CO-HUMULONE)



4.5%

6.5%

BETA ACIDS



4%

5%

TOTAL OIL



1.5 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

68% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

4% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

9% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

18% OF TOTAL OIL



YAKIMA CHIEF HOPS™

SAAZ



As the US equivalent of the longstanding, Czech Republic landrace variety, Saaz is the most classic “noble” aroma hop with longstanding and strong traditions.

COUNTRY
UNITED STATES

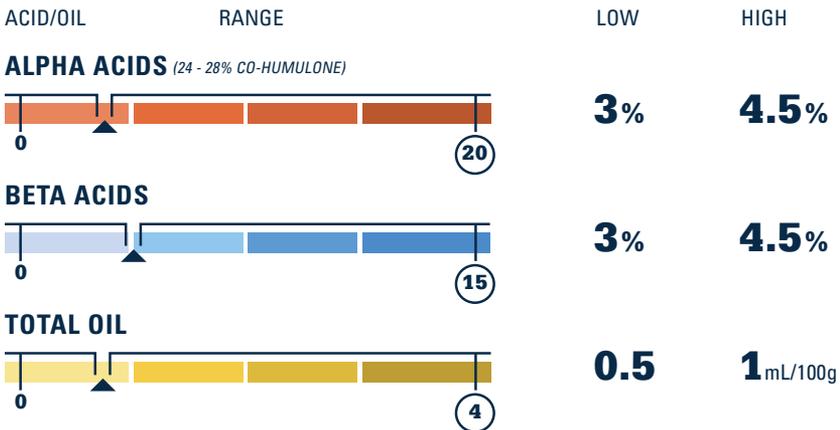
AROMA PROFILE
EARTHY • SPICY

BEER STYLES

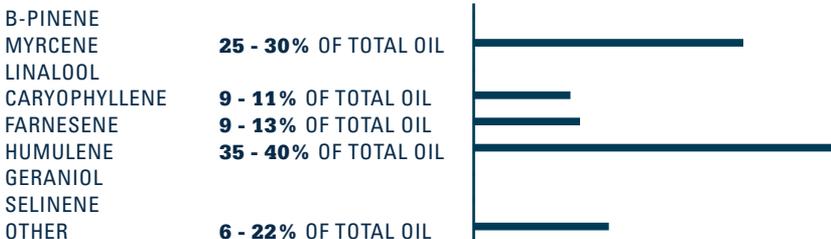
**LAGER • PILSNER • BELGIAN-STYLE ALE
WHEAT**



BREWING VALUES



TOTAL OIL BREAKDOWN



A Czech Republic landrace variety, Saaz is the most classic “noble” aroma hop with longstanding and strong traditions. It is associated with and defines Czech-style pilsners.

COUNTRY

**CZECH
REPUBLIC**

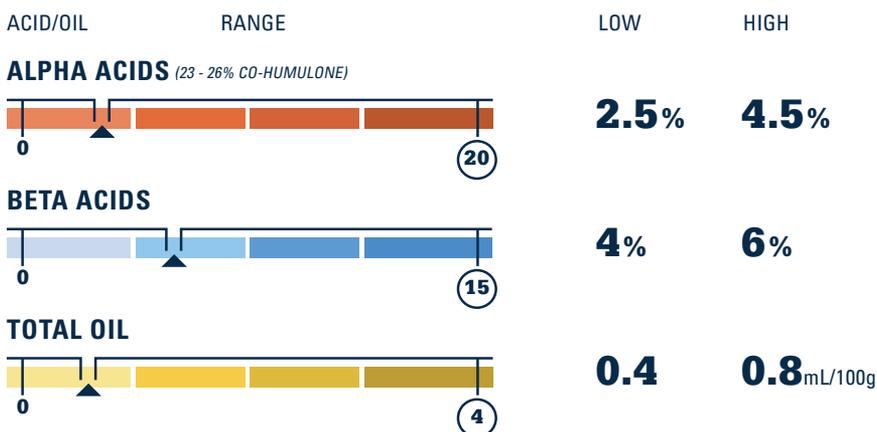
AROMA PROFILE

PLEASANT • MILD

BEER STYLES

PILSNER • LAGER • BELGIAN-STYLE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.4 - 0.8% OF TOTAL OIL	
MYRCENE	25 - 40% OF TOTAL OIL	
LINALOOL	0.4 - 0.6% OF TOTAL OIL	
CARYOPHYLLENE	6 - 9% OF TOTAL OIL	
FARNESENE	14 - 20% OF TOTAL OIL	
HUMULENE	15 - 30% OF TOTAL OIL	
GERANIOL	0.1 - 0.2% OF TOTAL OIL	
SELINENE		
OTHER	<1% - 39% OF TOTAL OIL	



SABRO™ BRAND



HBC 438 CV

Sabro™ HBC 438 cv. is the newest release from the Hop Breeding Company. Sabro™ is an aroma hop that is notable for its complexity of fruity and citrus flavors. Sabro's™ pedigree is the result of a unique cross pollination of a female neomexicanus hop. With a robust brewing performance, Sabro™ proves to be a strongly expressive hop that translates its flavor incredibly well into beer.

COUNTRY

UNITED STATES

AROMA PROFILE

**CITRUS • STONE FRUIT
COCONUT • TROPICAL FRUIT
HERBAL**



BEER STYLES

**IPA • SAISON • PORTER • STOUT
FRUIT BEER • AMERICAN PALE ALE**

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

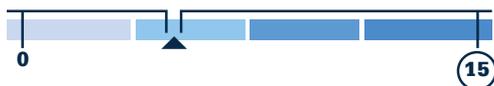
ALPHA ACIDS (20-23% CO-HUMULONE)



13%

17%

BETA ACIDS



4%

6.5%

TOTAL OIL



1.8

3.4 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.7 - 1.1% OF TOTAL OIL
MYRCENE	50 - 68% OF TOTAL OIL
LINALOOL	0.5 - 0.6% OF TOTAL OIL
CARYOPHYLLENE	7 - 11% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	7 - 14% OF TOTAL OIL
GERANIOL	0.8 - 1.6% OF TOTAL OIL
SELINENE	
OTHER	3% - 33% OF TOTAL OIL



YAKIMA CHIEF HOPS™

SANTIAM



Released in 1997 by the USDA, Santiam is a triploid selection from Tettang, Hallertau Mittelfrüh and a cultivar derived from Cascade. It is an American aroma variety with noble hop characteristics.

COUNTRY

UNITED STATES

AROMA PROFILE

BLACK PEPPER • SPICY FLORAL



BEER STYLES

BELGIAN-STYLE ALE • PILSNER • BOCK HELLES • LAGER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (22 - 24% CO-HUMULONE)



6%

8.5%

BETA ACIDS



7%

8%

TOTAL OIL



1

2.2 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.2 - 0.4% OF TOTAL OIL
MYRCENE	15 - 25% OF TOTAL OIL
LINALOOL	0.8 - 1.2% OF TOTAL OIL
CARYOPHYLLENE	6 - 9% OF TOTAL OIL
FARNESENE	14 - 18% OF TOTAL OIL
HUMULENE	20 - 30% OF TOTAL OIL
GERANIOL	0 - 0.3% OF TOTAL OIL
SELINENE	
OTHER	16 - 44% OF TOTAL OIL



YAKIMA CHIEF HOPS™

SAPHIR



Bred at the Hop Research Institute in Hüll and released in 2002, Saphir is an aroma variety with a distinct hoppy tang.

COUNTRY

GERMANY

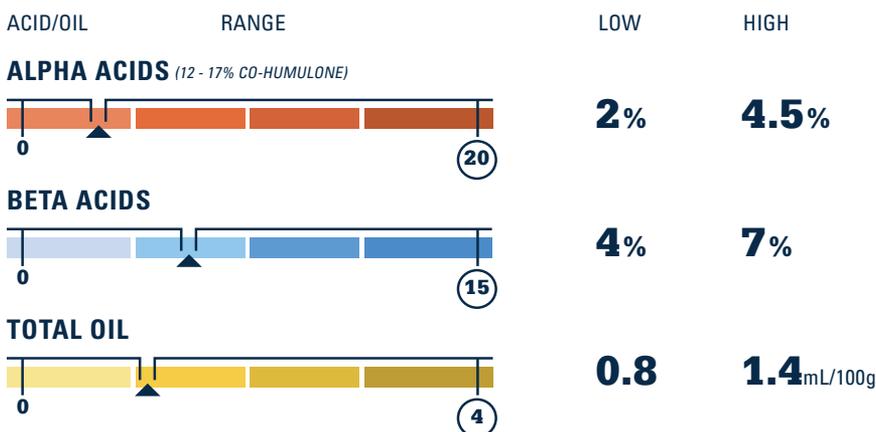
AROMA PROFILE

SPICY • FLORAL

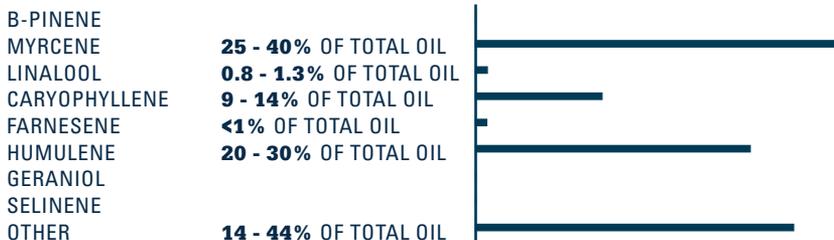
BEER STYLES

**GERMAN-STYLE LAGER • BELGIAN-STYLE ALE • PILSNER
WHEAT**

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SAVINJSKI GOLDING ≡

Originating from UK Fuggle, Styrian Savinjski Golding is a traditional Slovenian variety with pleasant bittering and noble aroma characteristics.

COUNTRY

SLOVENIA

AROMA PROFILE

NOBLE

BEER STYLES

ALE • LAGER • STOUT • BITTER • BARLEY WINE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

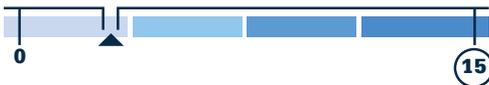
ALPHA ACIDS (25 - 30% CO-HUMULONE)



4.5%

6%

BETA ACIDS



2.5%

3.5%

TOTAL OIL



0.5

1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

27 - 33% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

9 - 11% OF TOTAL OIL

FARNESENE

2 - 5% OF TOTAL OIL

HUMULENE

34 - 38% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

13 - 28% OF TOTAL OIL



YAKIMA CHIEF HOPS™

SELECT



Bred at the Hop Research Center in Hüll and released in 1993, Select is often referred to as "Spalter Select." It was bred to be like the Spalt, Tettnang, and Saaz groups.

COUNTRY

GERMANY

AROMA PROFILE

SPICY • GRASS

BEER STYLES

LAGER • GERMAN-STYLE ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

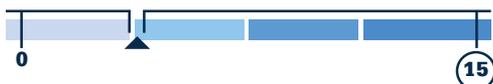
ALPHA ACIDS (21 - 27% CO-HUMULONE)



3%

6.5%

BETA ACIDS



2.5%

5%

TOTAL OIL



0.6

0.9 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

20 - 40% OF TOTAL OIL

MYRCENE

1 - 1.5% OF TOTAL OIL

LINALOOL

4 - 10% OF TOTAL OIL

CARYOPHYLLENE

FARNESENE

15 - 22% OF TOTAL OIL

HUMULENE

10 - 22% OF TOTAL OIL

GERANIOL

SELINENE

5 - 50% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS

SIMCOE® BRAND



YCR 14 CV

Developed by Yakima Chief Ranches and released in 2000, Simcoe® YCR 14 cv. is known for its brewing versatility and unique aroma characteristics. It continues to rise in popularity becoming one of the top ten varieties in the craft and home brewing industries.

COUNTRY

UNITED STATES

AROMA PROFILE

**PASSION FRUIT • BERRY
PINE • EARTH • CITRUS
BUBBLE GUM**



BEER STYLES

**IPA • AMERICAN PALE ALE • WHEAT
SAISON • AMBER**

BREWING VALUES

ACID/OIL

RANGE

LOW

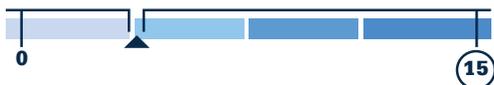
HIGH

ALPHA ACIDS (17 - 21% CO-HUMULONE)



11.5% 15%

BETA ACIDS



3% 4.5%

TOTAL OIL



0.8 3.2 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.5 - 1% OF TOTAL OIL
MYRCENE	40 - 50% OF TOTAL OIL
LINALOOL	0.5 - 0.9% OF TOTAL OIL
CARYOPHYLLENE	8 - 14% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	15 - 20% OF TOTAL OIL
GERANIOL	0.8 - 1.2% OF TOTAL OIL
SELINENE	
OTHER	12 - 34% OF TOTAL OIL



YAKIMA CHIEF HOPS™

SLÁDEK



A hybrid aroma variety of Saaz-type and Northern Brewer, Sládek displays noble characteristics with a fruity twist. Its name is derived from the Czech word meaning “beer brewer.” Sládek is noted to be a good complement to Saaz in late-hopping applications.

COUNTRY

**CZECH
REPUBLIC**

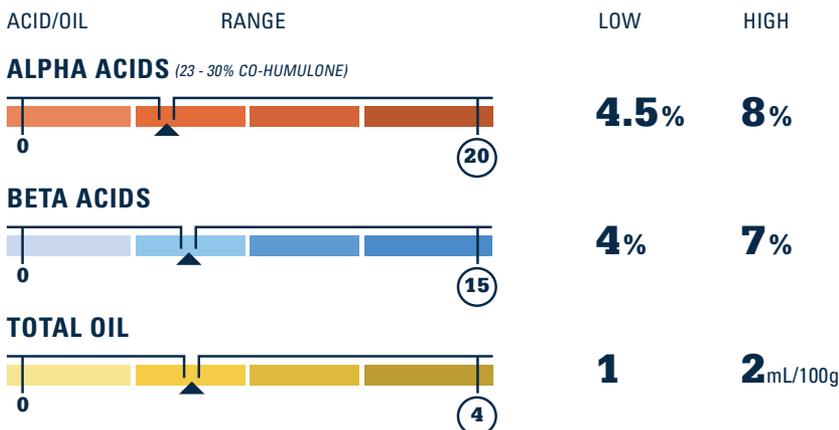
AROMA PROFILE

PEACH • GRAPEFRUIT • PASSION FRUIT

BEER STYLES

IPA • PILSNER • BLONDE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.5 - 0.8% OF TOTAL OIL
MYRCENE	35 - 50% OF TOTAL OIL
LINALOOL	0.1 - 0.3% OF TOTAL OIL
CARYOPHYLLENE	9 - 14% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	20 - 40% OF TOTAL OIL
GERANIOL	0.1 - 0.25% OF TOTAL OIL
SELINENE	
OTHER	<1% - 34% OF TOTAL OIL



YAKIMA CHIEF HOPS™

SMARAGD



Bred at the Hop Research Institute in Hüll, Smaragd is a fine aroma variety with many noble characteristics. It was formerly known as Emerald.

COUNTRY

GERMANY

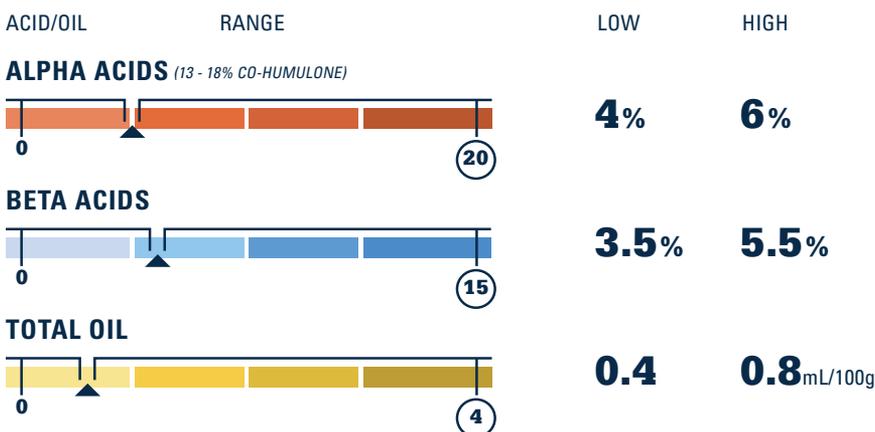
AROMA PROFILE

ANISE • TOBACCO • CLOVE

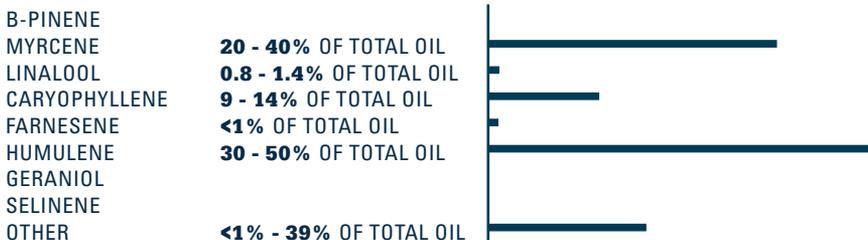
BEER STYLES

ALE • ALTBIER • KÖLSCH

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SORACHI ACE



Developed in Japan in 1984 for Sapporo Breweries, Ltd., Sorachi Ace is a cross between Brewer's Gold, Saaz and Beikei No. 2 male. It is available in limited quantities, however, it remains a popular variety among craft brewers for its unique citrus fruit, herbal and dill aromas.

COUNTRY
UNITED STATES

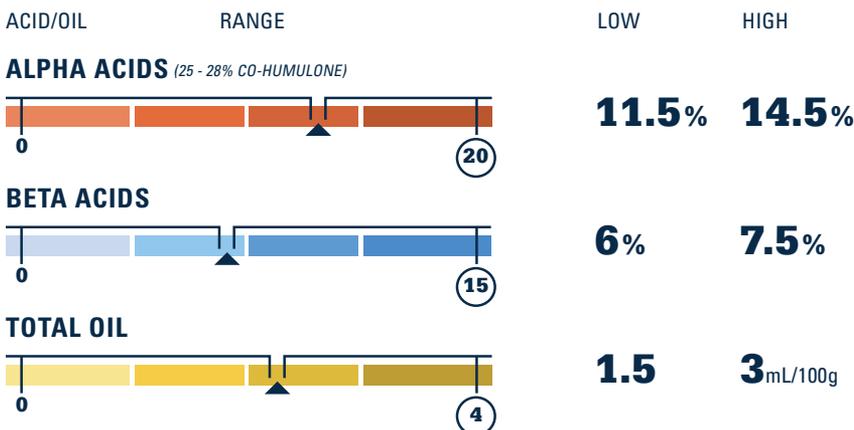
AROMA PROFILE
LEMON • LIME • DILL



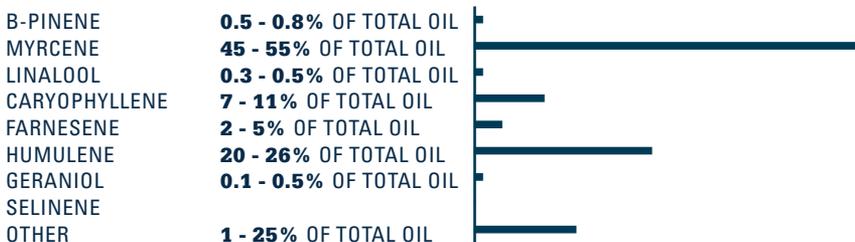
BEER STYLES

**IPA • AMERICAN PALE ALE • LAGER
BELGIAN-STYLE ALE • SAISON**

BREWING VALUES



TOTAL OIL BREAKDOWN



SOUTHERN CROSS



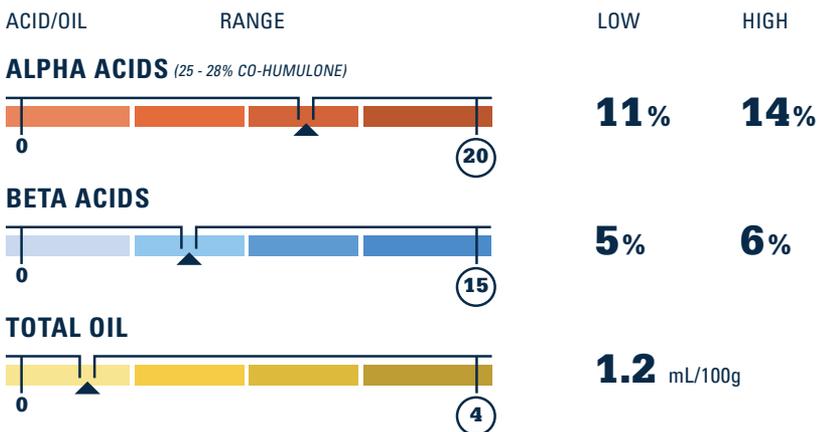
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1994, Southern Cross is a triploid cross between New Zealand Smoothcone and a 1950's research variety bred from a crossing of Californian and English Fuggle. It has excellent essential oils and low co-humulone delivering a delicate balance of citrus and spice when added at the end of boil.

COUNTRY
NEW ZEALAND

AROMA PROFILE
LEMON PEEL • LIME • TROPICAL FRUIT • PINE

BEER STYLES
PALE ALE • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	32% OF TOTAL OIL
MYRCENE	
LINALOOL	
CARYOPHYLLENE	6.7% OF TOTAL OIL
FARNESENE	7.3% OF TOTAL OIL
HUMULENE	20.8% OF TOTAL OIL
GERANIOL	
SELINENE	
OTHER	33% OF TOTAL OIL



SOVEREIGN



Bred at Wye College in 1995 and released in 2004, Sovereign is a dwarf variety bred by open pollination. It is a granddaughter of Pioneer. Sovereign is often used in conjunction with Goldings in English-style beers.

COUNTRY

UNITED KINGDOM

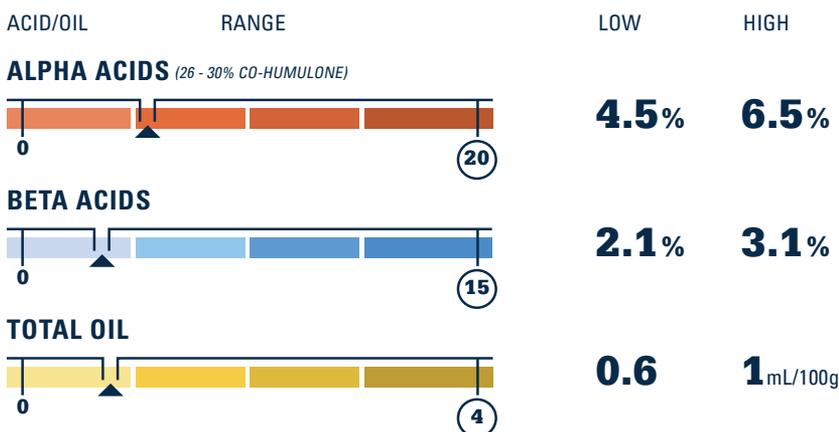
AROMA PROFILE

FLORAL • GRASS • HERBAL • MINT • PEAR

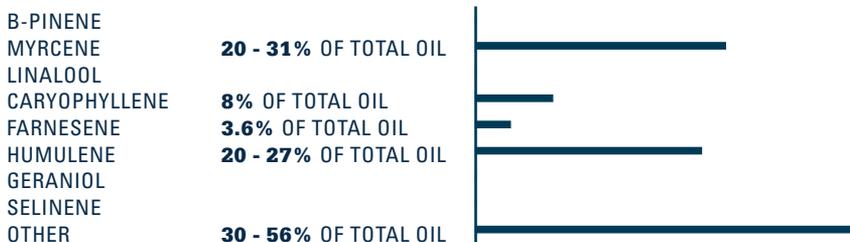
BEER STYLES

ENGLISH-STYLE BITTER • PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SPALT



A landrace variety originating from the Spalt region in Southern Germany, Spalt (or Spalter) is an aroma variety with characteristics similar to German Tettnang. It belongs to the Saaz group and displays fine, noble characteristics.

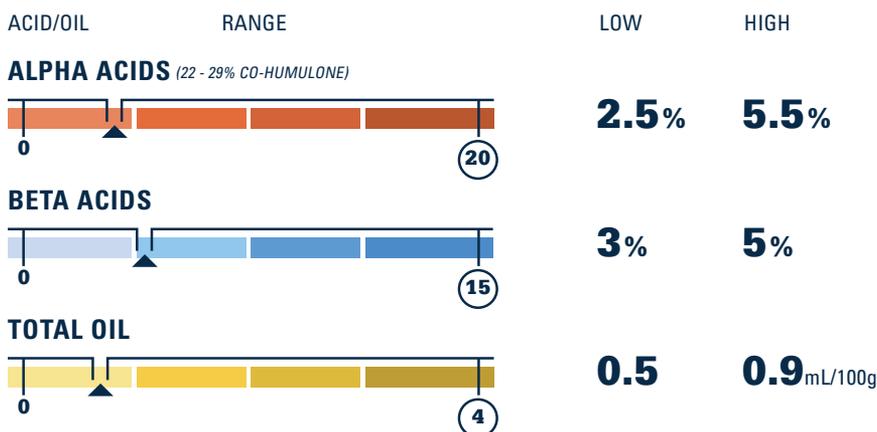
COUNTRY
GERMANY

AROMA PROFILE
NOBLE

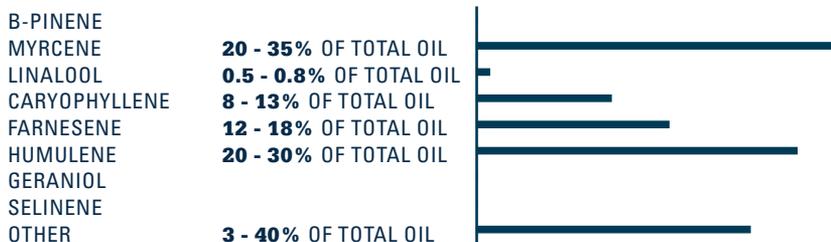
BEER STYLES

LAGER • ALTBIER • BOCK • HELLES • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN



STERLING



Bred in 1990 and released in 1998, Sterling is an aroma variety with noble hop characteristics. Its lineage includes Saaz, Cascade, Brewer's Gold and Early Green.

COUNTRY
UNITED STATES

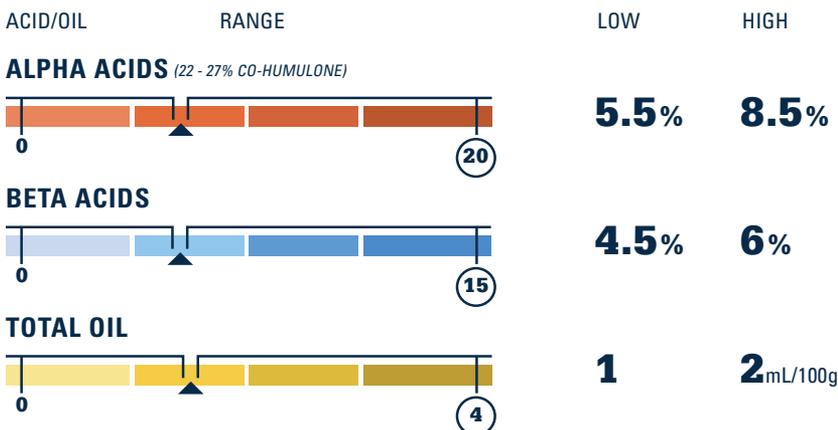
AROMA PROFILE
NOBLE • HERBAL • SPICY FLORAL



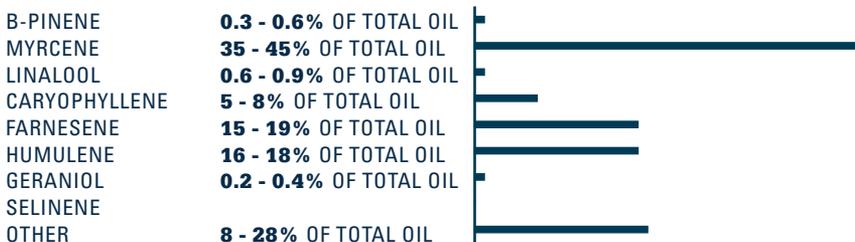
BEER STYLES

LAGER • WHEAT • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN



STICKLEBRACT



Developed by New Zealand Horticultural Research Center at Riwaka (now New Zealand Institute for Plant and Food Research) and released in 1972, Sticklebract is a result of open pollination of New Zealand First Choice. It was originally released as a high alpha bittering hop, but has become a dual purpose variety characterized by citrus and pine flavors.

COUNTRY
NEW ZEALAND

AROMA PROFILE
PINE • CITRUS

BEER STYLES

ENGLISH-STYLE BITTER • IPA • ENGLISH PALE ALE • PILSNER

BREWING VALUES

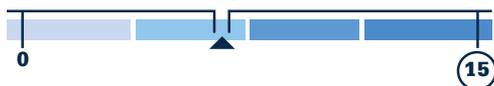
ACID/OIL RANGE LOW HIGH

ALPHA ACIDS (38% CO-HUMULONE)



12.3%

BETA ACIDS



6.6%

TOTAL OIL



0.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE 15% OF TOTAL OIL
MYRCENE
LINALOOL
CARYOPHYLLENE 12.6% OF TOTAL OIL
FARNESENE 6.7% OF TOTAL OIL
HUMULENE 25.5% OF TOTAL OIL
GERANIOL
SELINENE
OTHER 40% OF TOTAL OIL



YAKIMA CHIEF HOPS™

STRISSELSPALT



A traditional landrace variety from the Alsace region in France, near Strasbourg, Strisselspalt is globally accepted as a classic, noble variety. Its aroma is delicate with floral, spicy, herbal and subtle citrus notes.

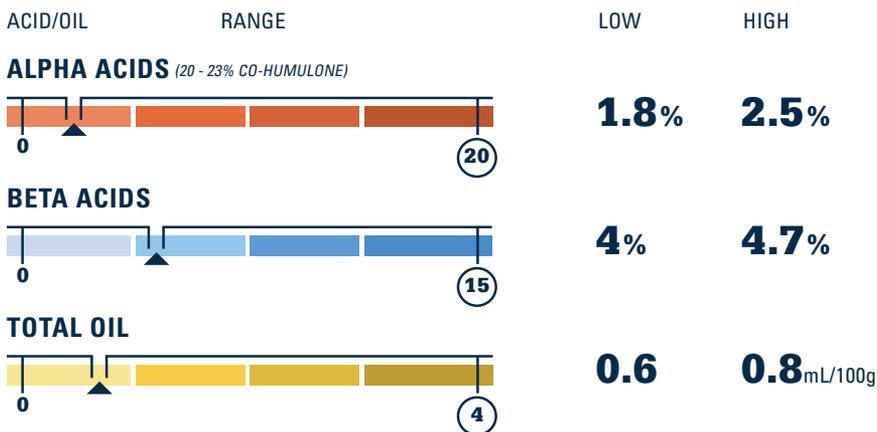
COUNTRY
FRANCE

AROMA PROFILE
**HERBAL • GRASS • SPICY • GRAPEFRUIT
FLORAL**

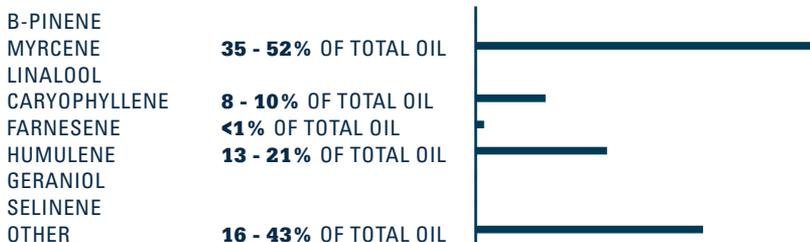
BEER STYLES

SAISON • BIÈRE DE GARDE • BELGIAN-STYLE PALE ALE • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SUMMER™ BRAND



Bred in 1997 at Tasmanian Bushy Park Breeding Garden, Summer™ is the result of open pollination of a tetraploid Czech Saaz. It features balanced citrus and stone fruit flavors, but showcases distinct apricot and melon characteristics in dry hopping applications.

COUNTRY

AUSTRALIA

AROMA PROFILE

APRICOT • MELON

BEER STYLES

ALE • LAGER • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

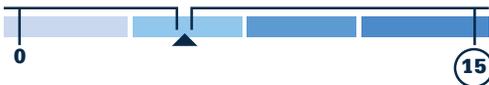
ALPHA ACIDS (20 - 25% CO-HUMULONE)



5.6%

6.4%

BETA ACIDS



4.8%

6.1%

TOTAL OIL



1.4

2 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

29 - 38% OF TOTAL OIL

MYRCENE

0.2 - 0.6% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

8 - 11% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

28 - 50% OF TOTAL OIL

GERANIOL

SELINENE

1 - 2% OF TOTAL OIL

OTHER

<1% - 33% OF TOTAL OIL



YAKIMA CHIEF HOPS™

SUMMIT™ BRAND



Bred by the American Dwarf Hop Association and released in 2003, Summit™ is a cross between Lexus and an unspecified male derived from numerous hops including Zeus, Nugget and male USDA varieties. It is the first dwarf hop to be bred for production in the United States. Summit™ is mainly used as a bittering hop, but does have earthy aromatic characteristics and subtle hints of citrus.

COUNTRY
UNITED STATES

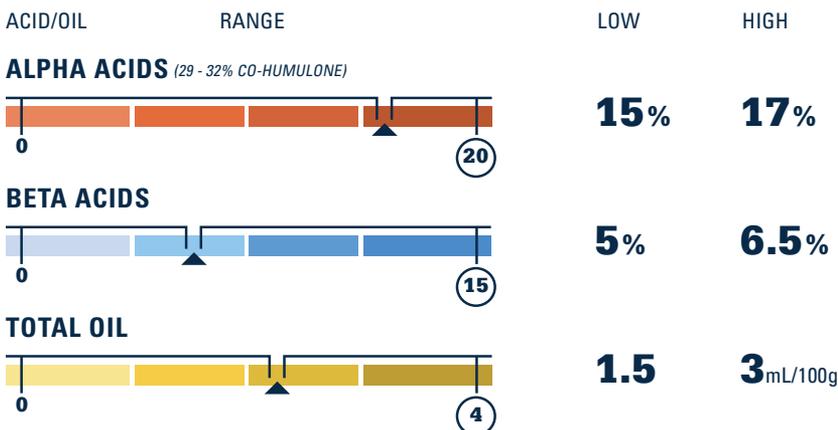
AROMA PROFILE
**PEPPER • INCENSE • ANISE
ORANGE • PINK GRAPEFRUIT
TANGERINE**



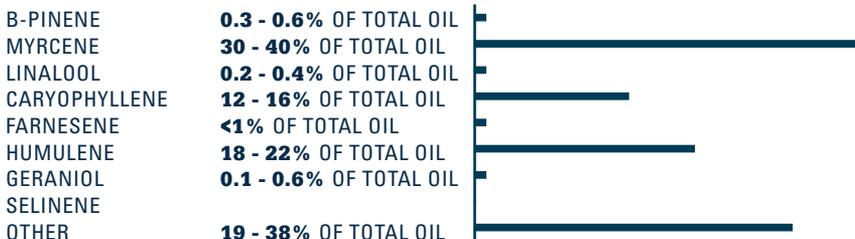
BEER STYLES

IPA • DOUBLE IPA • PALE ALE • WHEAT

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SUPER PRIDE



Bred in 1987 at the Rostrevor Breeding Garden in Victoria and released in 1995, Super Pride is a daughter of Pride of Ringwood. It is predominantly used as a bittering hop, but offers a subtle resin and fruit characteristic as well.

COUNTRY

AUSTRALIA

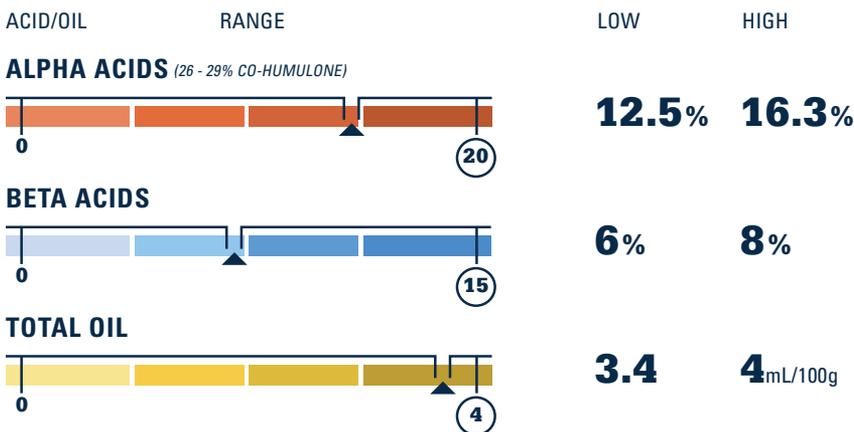
AROMA PROFILE

RESIN • FRUIT

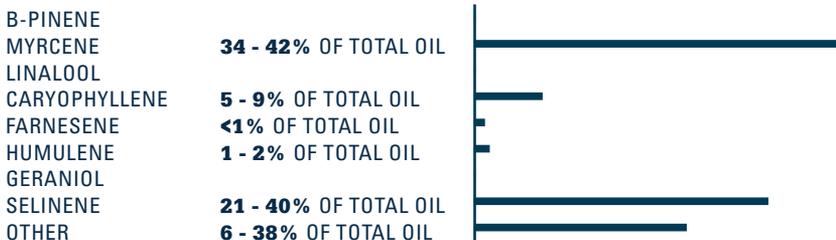
BEER STYLES

BOCK • PALE ALE • LAGER • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SUSSEX



Discovered in 2005 at Gate Court, Northiam in East Sussex, Sussex is a “chance find” variety. It is likely to have resulted from open pollination of a wild hop.

COUNTRY

UNITED KINGDOM

AROMA PROFILE

EARTHY • GRASS • MINT • CITRUS • VANILLA

BEER STYLES

ALE

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (32 - 43% CO-HUMULONE)



4.3%

5.8%

BETA ACIDS



2.4%

3.2%

TOTAL OIL



0.4

0.6 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

42% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

FARNESENE

<1% OF TOTAL OIL

HUMULENE

23% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

34% OF TOTAL OIL



YAKIMA CHIEF HOPS™

SYLVA™ BRAND



Bred in 1997 at Tasmanian Bushy Park Breeding Garden, Sylva™ is a result of open pollination of Czech Saaz. Brewing characteristics closely resemble that of its parent, with complex yet subtle floral and herbal characteristics.

COUNTRY

AUSTRALIA

AROMA PROFILE

FLORAL • HERBAL • NOBLE

BEER STYLES

LAGER • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

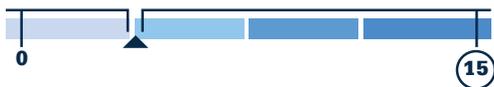
ALPHA ACIDS (20 - 25% CO-HUMULONE)



5.6%

7.3%

BETA ACIDS



3%

4.6%

TOTAL OIL



1

1.4 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

26 - 36% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

FARNESENE

HUMULENE

GERANIOL

SELINENE

OTHER

5 - 8% OF TOTAL OIL

25% OF TOTAL OIL

18 - 27% OF TOTAL OIL

<1% OF TOTAL OIL

3 - 25% OF TOTAL OIL



YAKIMA CHIEF HOPS™

TAHOMA



Released by Washington State University in 2013, Tahoma is a daughter of Glacier. It retains the low co-humulone characteristic of Glacier but displays slightly higher alpha acid content. Tahoma is considered to be "Cascade-like" with a pleasant, predominantly citrus aroma profile.

COUNTRY
UNITED STATES

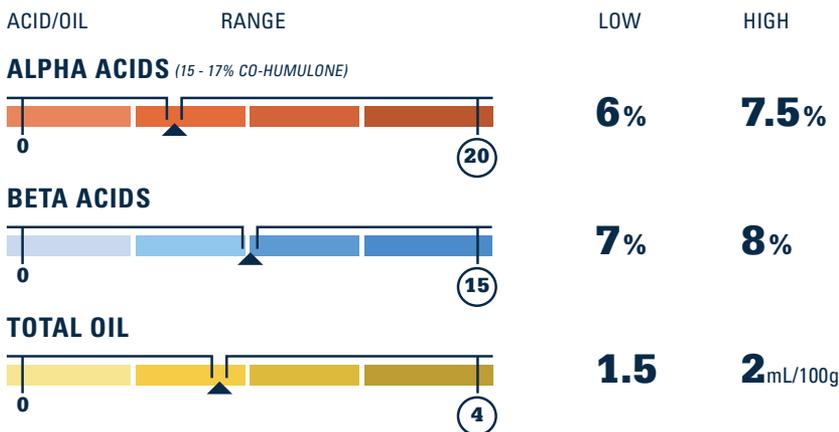
AROMA PROFILE
**LEMON • GRAPEFRUIT
CEDAR • PINE • GREEN MELON
FLORAL • PEPPER**



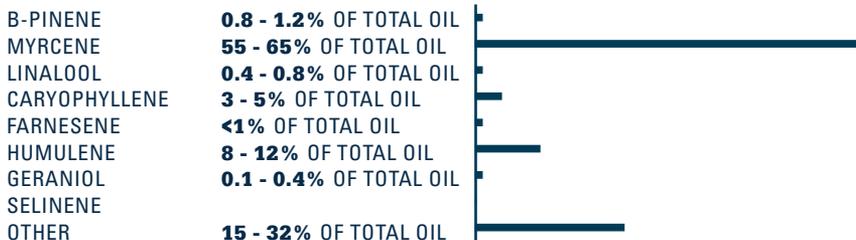
BEER STYLES

**AMERICAN-STYLE PALE ALE • STOUT
PORTER**

BREWING VALUES



TOTAL OIL BREAKDOWN



TARGET



Bred at Wye College and released in 1972, Target is a second generation selection from Northern Brewer and a male Eastwell Golding; it is a cousin to Challenger. As a dual purpose variety, Target provides strong bittering characteristics and is unusually effective in dry hop applications compared to other English varieties.

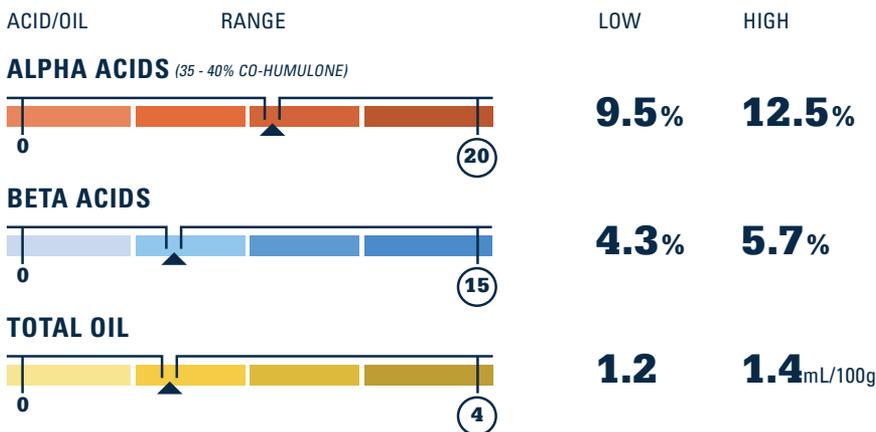
COUNTRY
**UNITED
KINGDOM**

AROMA PROFILE
**SAGE • PEPPER • CITRUS MARMALADE
TANGERINE**

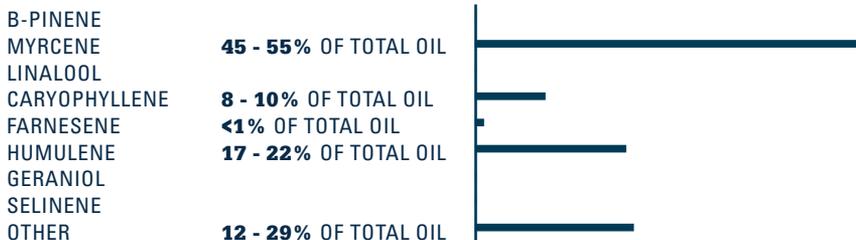
BEER STYLES

ENGLISH-STYLE ALE • LAGER • BROWN ALE • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN



TAURUS



Bred at the Hop Research Center in Hüll and released in 1995, Taurus is a high alpha cross with noble aroma characteristics. It has good pickability of small, compact cones.

COUNTRY

GERMANY

AROMA PROFILE

BLACKCURRANT • PEPPER • ZESTY

BEER STYLES

GERMAN-STYLE ALE • LAGER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (20 - 25% CO-HUMULONE)



12%

17%

BETA ACIDS



4%

6%

TOTAL OIL



0.9

1.4 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

30 - 50% OF TOTAL OIL

MYRCENE

1 - 1.5% OF TOTAL OIL

LINALOOL

6 - 11% OF TOTAL OIL

CARYOPHYLLENE

FARNESENE

<1% OF TOTAL OIL

HUMULENE

22 - 33% OF TOTAL OIL

GERANIOL

SELINENE

4 - 40% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

TETTANG



Originating from the traditional landrace variety from Germany, Tettang is from the Saaz group. It displays fine, noble characteristics with a slight spiciness and is typically used in lager and pilsner style beers. US Tettang is grown in Washington State and Oregon.

COUNTRY
UNITED STATES

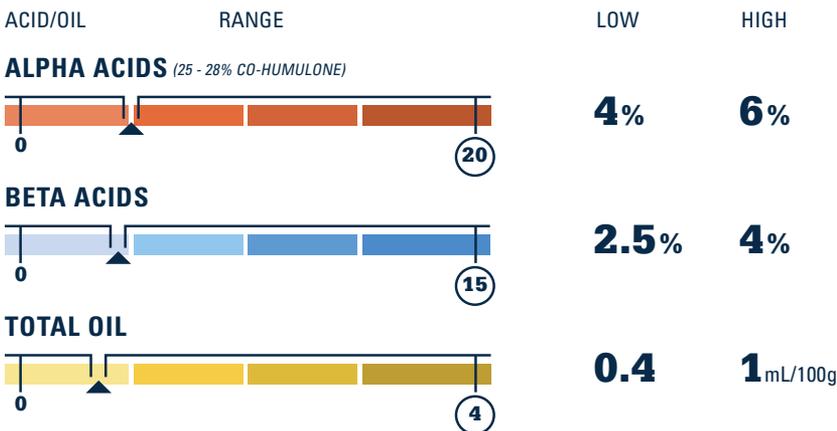
AROMA PROFILE
NOBLE



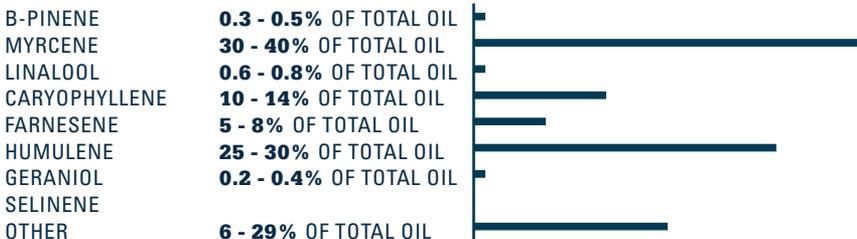
BEER STYLES

**LAGER • WHEAT • GERMAN-STYLE ALE
PILSNER**

BREWING VALUES



TOTAL OIL BREAKDOWN



TETTANG



A landrace variety originating from the Tettang region on Lake Constance in Germany, Tettang (or Tettanger) is from the Saaz group. It displays fine, noble characteristics with a slight spiciness.

COUNTRY

GERMANY

AROMA PROFILE

SPICY • PEPPER • BLACK TEA

BEER STYLES

LAGER • WHEAT • GERMAN-STYLE ALE • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (22 - 29% CO-HUMULONE)



3%

6%

BETA ACIDS



3%

5%

TOTAL OIL



0.5

0.9 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

20 - 35% OF TOTAL OIL

MYRCENE

0.4 - 0.9% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

6 - 11% OF TOTAL OIL

FARNESENE

16 - 24% OF TOTAL OIL

HUMULENE

20 - 30% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

<1% - 38% OF TOTAL OIL



YAKIMA CHIEF HOPS™

TOMAHAWK® BRAND

F10 CV

Bred by Charles Zimmermann, Tomahawk® F10 cv. was the first commercially grown “Super Alpha” variety. Tomahawk® is often referred to as CTZ, a trio of similar hops including Columbus and Zeus.

COUNTRY

UNITED STATES

AROMA PROFILE

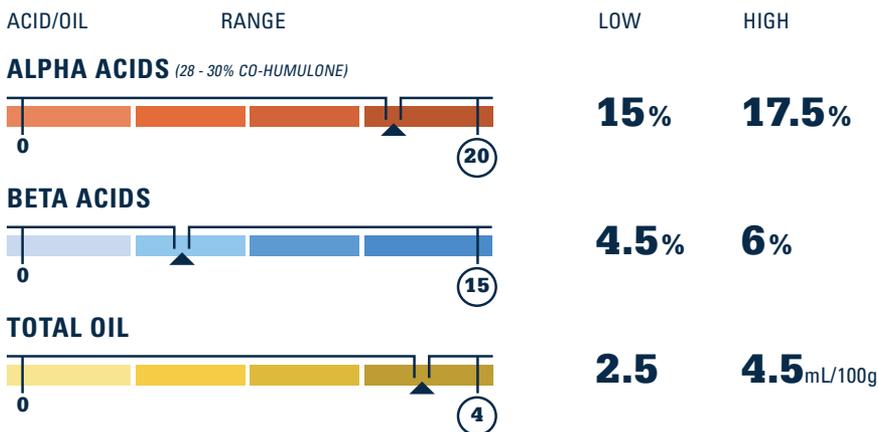
**PUNGENT • BLACK PEPPER
LICORICE • CURRY**



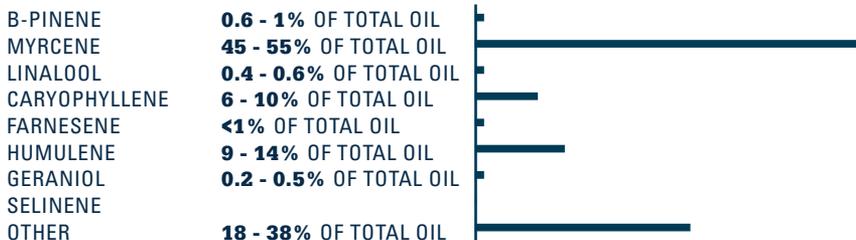
BEER STYLES

IPA • PALE ALE • IMPERIAL ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

TOPAZ™ BRAND



TC-85-70

Bred during the 1980s, Topaz™ did not find popularity within the brewing community until 2007-2008. Its ancestry includes an existing high alpha Australian variety crossed with a Wye College male. Topaz™ is known for its single hop applications, producing resinous, grass and tropical fruit flavors.

COUNTRY

AUSTRALIA

AROMA PROFILE

RESIN • GRASS • LYCHEE

BEER STYLES

PALE ALE • IPA • AMBER

BREWING VALUES

ACID/OIL

RANGE

LOW

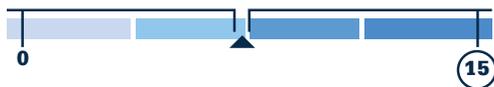
HIGH

ALPHA ACIDS (48 - 51% CO-HUMULONE)



13.7% **17.7%**

BETA ACIDS



6.4% **7.9%**

TOTAL OIL



1.7 **2.2** mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

34 - 56% OF TOTAL OIL

MYRCENE

0.3 - 0.6% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

7 - 13% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

8 - 13% OF TOTAL OIL

GERANIOL

SELINENE

1 - 3% OF TOTAL OIL

OTHER

13 - 49% OF TOTAL OIL



YAKIMA CHIEF HOPS™

TRADITION



Bred at the Hop Research Institute in Hüll and registered in 1993, Tradition is a daughter of Hallertau Gold. It is often compared to Mittelfrüh, displaying fine, noble characteristics with a fruity twist.

COUNTRY

GERMANY

AROMA PROFILE

GRASS • TEA • ORANGE • LAVENDER

BEER STYLES

GERMAN-STYLE LAGER • WHEAT • PILSNER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

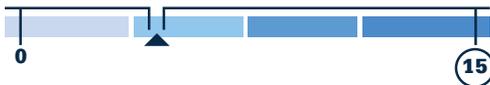
ALPHA ACIDS (24 - 30% CO-HUMULONE)



4%

7%

BETA ACIDS



3%

6%

TOTAL OIL



0.5

1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

17 - 32% OF TOTAL OIL

MYRCENE

0.7 - 1.3% OF TOTAL OIL

LINALOOL

CARYOPHYLLENE

10 - 15% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

35 - 50% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

1 - 36% OF TOTAL OIL



YAKIMA CHIEF HOPS™

TRIPLEPEARL



Released by USDA-ARS in 2013, TriplePearl is an open pollinated cross between a tetraploid Perle female and an unknown diploid male. Its lineage includes Northern Brewer and Hallertau. TriplePearl is similar to Perle but features more pronounced aroma characteristics.

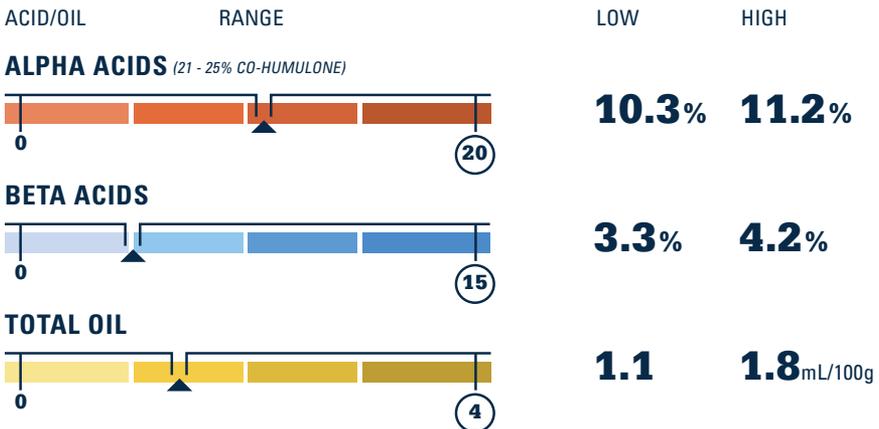
COUNTRY
UNITED STATES

AROMA PROFILE
**MELON • ORANGE • RESIN
SPICE • PEPPER**

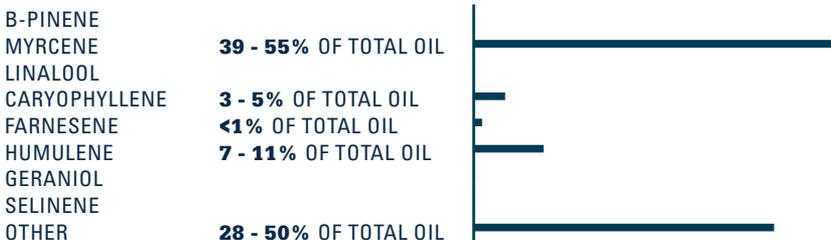


BEER STYLES
PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



TRISKEL



Developed in 2006 as a cross between Strisselspalt and Yeoman, Triskel contains many of the same characteristics as Strisselspalt but displays a more pronounced flavor profile.

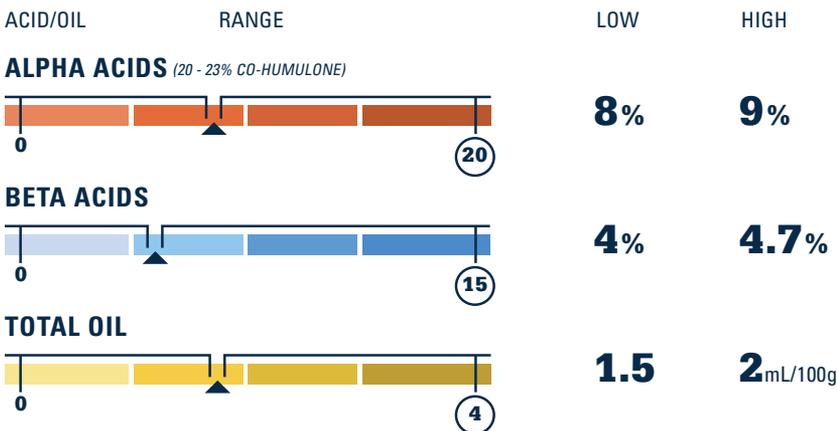
COUNTRY
FRANCE

AROMA PROFILE
FLORAL • HERBAL • CITRUS • SPICY

BEER STYLES

**SAISON • BELGIAN-STYLE ALE • LAGER • PALE ALE • PILSNER
WHEAT**

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	60% OF TOTAL OIL
MYRCENE	
LINALOOL	6.1% OF TOTAL OIL
CARYOPHYLLENE	<1% OF TOTAL OIL
FARNESENE	
HUMULENE	13.5% OF TOTAL OIL
GERANIOL	
SELINENE	
OTHER	19.4% OF TOTAL OIL



YAKIMA CHIEF HOPS™

ULTRA



Bred by the hops research program in Corvallis, Oregon in 1983 and released in 1995 by the USDA, Ultra is a triploid seedling of Hallertau Mittelfrüh and half sister to Mt. Hood, Liberty and Crystal. Ultra is related to traditional German varieties and can be utilized in similar applications.

COUNTRY
UNITED STATES

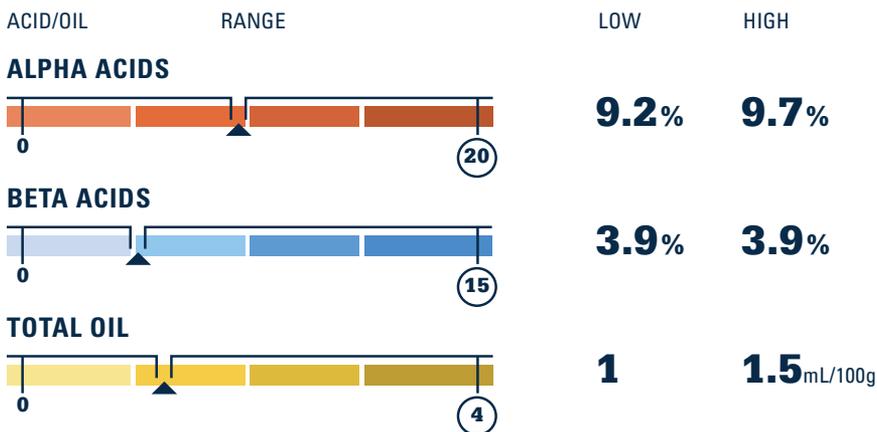
AROMA PROFILE
MILD • FLORAL BOUQUET



BEER STYLES

LAGER • PILSNER • WHEAT

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 1% OF TOTAL OIL	
MYRCENE	50 - 60% OF TOTAL OIL	
LINALOOL	1 - 1.5% OF TOTAL OIL	
CARYOPHYLLENE	6 - 9% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	10 - 15% OF TOTAL OIL	
GERANIOL	0.1 - 0.5% OF TOTAL OIL	
SELINENE		
OTHER	12 - 31% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

VANGUARD



Bred in 1982 by the USDA and released in 1997, Vanguard is an aroma variety with similar characteristics to Hallertau Mittelfrüh. Vanguard is typically utilized in traditional German-style beers as a noble type variety.

COUNTRY
UNITED STATES

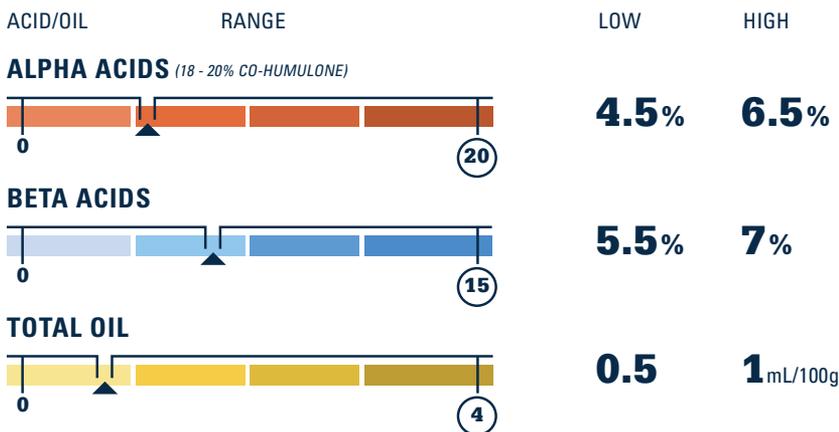
AROMA PROFILE
WOOD



BEER STYLES

LAGER • BELGIAN-STYLE ALE • WHEAT PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.1 - 0.6% OF TOTAL OIL	
MYRCENE	5 - 15% OF TOTAL OIL	
LINALOOL	0.2 - 0.4% OF TOTAL OIL	
CARYOPHYLLENE	13 - 17% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	49 - 55% OF TOTAL OIL	
GERANIOL	0.1 - 0.2% OF TOTAL OIL	
SELINENE		
OTHER	11 - 32% OF TOTAL OIL	



VIC SECRET™ BRAND ≡

00-207-013

Developed in 2000 and reaching commercial production in 2013, Vic Secret™ is one of the newest hop varieties from Australia. It is a sister to Topaz™ containing high alpha content and displaying pronounced tropical fruit flavors in whirlpool and dry hop additions.

COUNTRY

AUSTRALIA

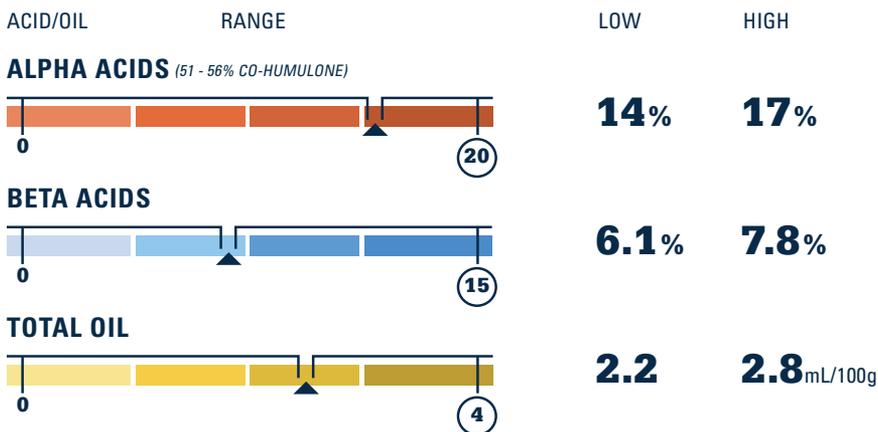
AROMA PROFILE

PINE • EARTH • PASSIONFRUIT • PINEAPPLE

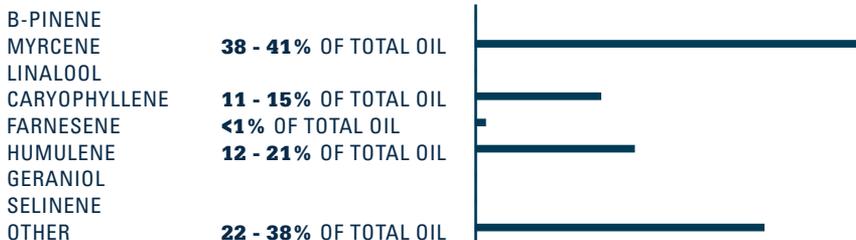
BEER STYLES

PALE ALE • IPA • STOUT • PORTER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

WAI-ITI™ BRAND



HORT7709

Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2011, Wai-iti™ is a granddaughter of Liberty and is derived from 1/3 Hallertau Mittelfrüh. Fresh peaches and stone fruit dominate the aroma in single hopped beers and when combining with other varieties in late additions. Wai-iti™ is best known for its fruity, aroma-driven results.

COUNTRY

**NEW
ZEALAND**

AROMA PROFILE

**PEACH • APRICOT • SPICE • LIME
TROPICAL FRUIT**

BEER STYLES

PALE ALE • PILSNER • IPA • WHEAT

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

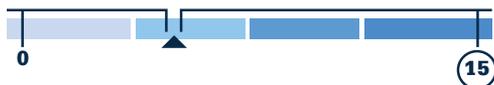
ALPHA ACIDS (22 - 24% CO-HUMULONE)



2.5%

3.5%

BETA ACIDS



4.5%

5.5%

TOTAL OIL



1.6 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

3% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

9% OF TOTAL OIL

FARNESENE

13% OF TOTAL OIL

HUMULENE

28% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

47% OF TOTAL OIL



YAKIMA CHIEF HOPS™

WAIMEA™ BRAND



HORT3953

Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2012, Waimea's lineage includes Californian Late Cluster, Saaz and Fuggle. Waimea is a big hop for big beers and can be used across an array of styles in a variety of brew house and dry hopping applications.

COUNTRY

**NEW
ZEALAND**

AROMA PROFILE

CITRUS • PINE • HERBAL

BEER STYLES

IPA • LAGER

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

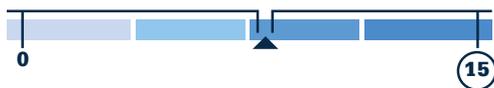
ALPHA ACIDS (22 - 24% CO-HUMULONE)



16%

19%

BETA ACIDS



7%

9%

TOTAL OIL



2.1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

60% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

2.6% OF TOTAL OIL

FARNESENE

5% OF TOTAL OIL

HUMULENE

9.5% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

23% OF TOTAL OIL



YAKIMA CHIEF HOPS™

WAKATU™ BRAND



77-05

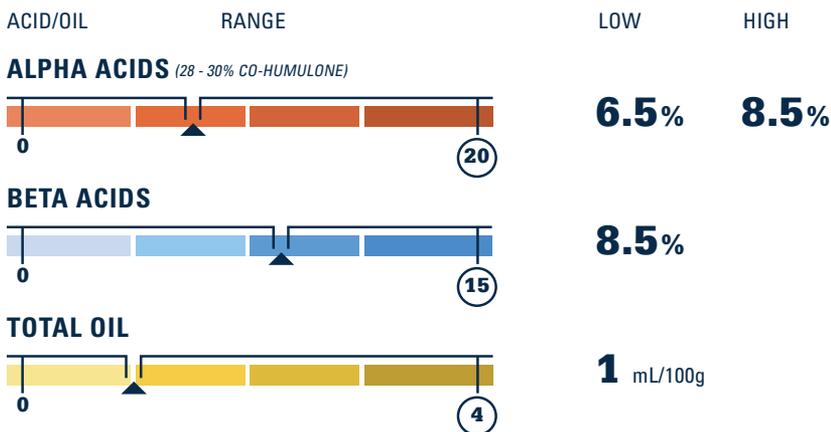
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1988, as Hallertau Aroma, Wakatu™ was renamed in 2011. It is a triploid variety with two thirds Hallertau Mittelfrüh parentage. Wakatu™ is a well rounded variety with strong, fresh citrus characteristics and some bittering capabilities.

COUNTRY
NEW ZEALAND

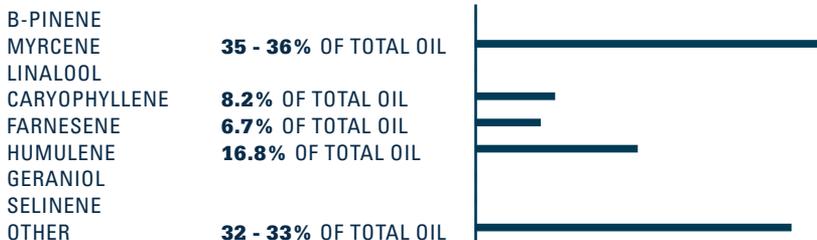
AROMA PROFILE
LIME ZEST • FLORAL

BEER STYLES
LAGER • PALE ALE • PILSNER • BOCK

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

WARRIOR® BRAND



YCR 5 CV

Developed by Yakima Chief Ranches, Warrior® YCR 5 cv. was selected for its high alpha content, low co-humulone, good storage stability and tolerance to powdery mildew. It is primarily used for its mild, clean bittering properties.

COUNTRY
UNITED STATES

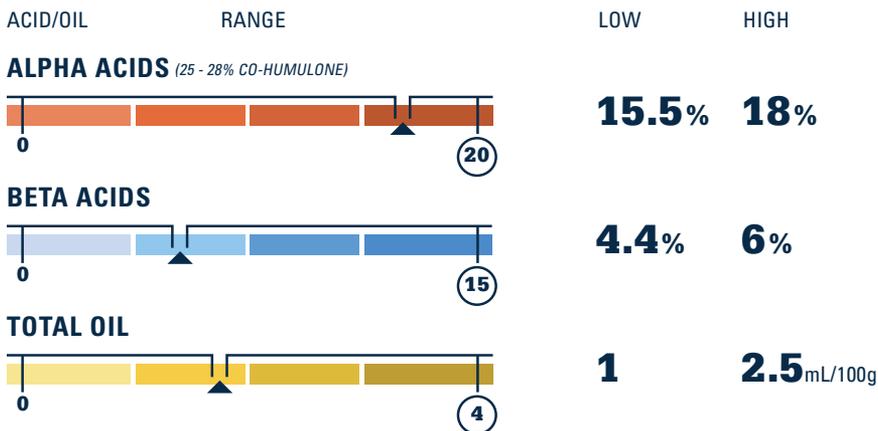
AROMA PROFILE
MILD • RESINOUS



BEER STYLES

IPA • AMERICAN PALE ALE • RYE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.5 - 0.7% OF TOTAL OIL	
MYRCENE	40 - 50% OF TOTAL OIL	
LINALOOL	0.4 - 0.7% OF TOTAL OIL	
CARYOPHYLLENE	11 - 14% OF TOTAL OIL	
FARNESENE	<1% OF TOTAL OIL	
HUMULENE	15 - 18% OF TOTAL OIL	
GERANIOL	0.4 - 0.8% OF TOTAL OIL	
SELINENE		
OTHER	15 - 32% OF TOTAL OIL	



WHITBREAD GOLDING

Developed through grower selection circa 1911, Whitbread Golding (WGV) is not a true Golding. It displays many similar characteristics but has more robust and slightly sweet, hoppy flavor.

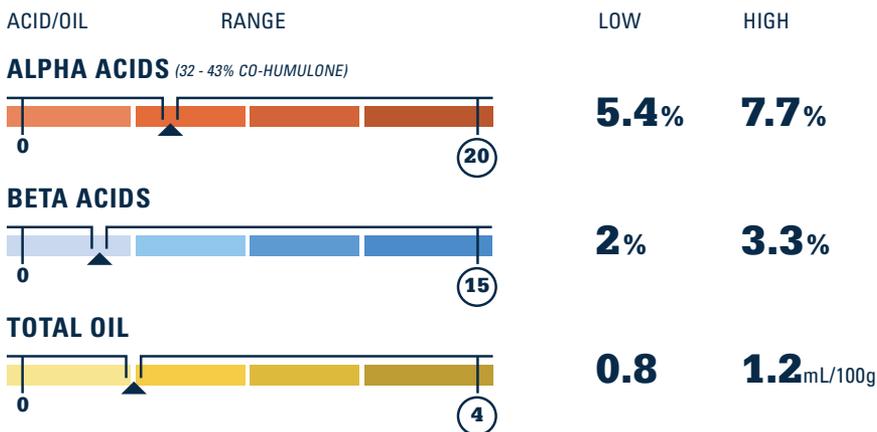
COUNTRY
UNITED KINGDOM

AROMA PROFILE
FRESH EARTH • FLORAL • SWEET FRUIT

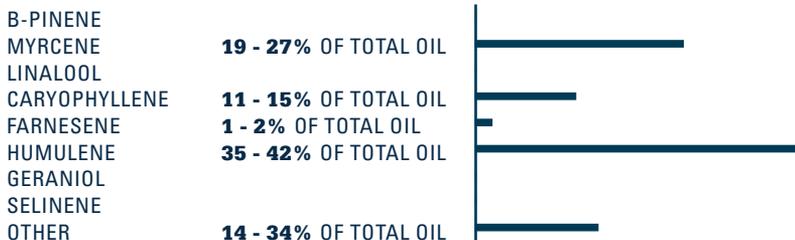
BEER STYLES

ENGLISH-STYLE BITTER • PALE ALE • BIERE DE GARDE SAISON • WHEAT

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

WILLAMETTE



Released in 1976 from the USDA breeding program, Willamette is a triploid seedling of English Fuggle. For years, it was the most widely grown aroma variety in the US. It is named after Oregon's Willamette River which runs through the heart of the state's hop growing region.

COUNTRY
UNITED STATES

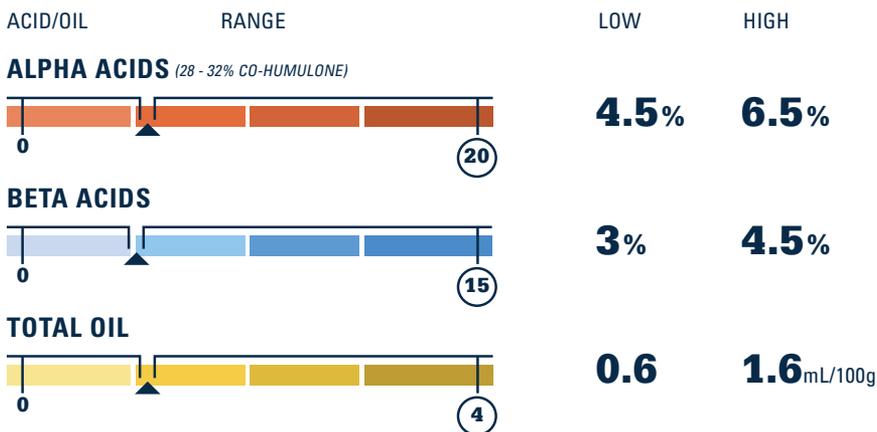
AROMA PROFILE
**FLORAL • INCENSE
ELDERBERRY**



BEER STYLES

**BROWN ALE • LAGER • PALE ALE • STOUT
PORTER • ESB**

BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.3 - 0.5% OF TOTAL OIL	
MYRCENE	22 - 32% OF TOTAL OIL	
LINALOOL	0.4 - 0.7% OF TOTAL OIL	
CARYOPHYLLENE	12 - 14% OF TOTAL OIL	
FARNESENE	7 - 10% OF TOTAL OIL	
HUMULENE	31 - 35% OF TOTAL OIL	
GERANIOL	0.1 - 0.3% OF TOTAL OIL	
SELINENE		
OTHER	8 - 27% OF TOTAL OIL	



YAKIMA CHIEF HOPS™

YAKIMA GOLD



Released by Washington State University in 2013, Yakima Gold is a cross between Early Cluster and a native Slovenian male. It is an excellent general purpose variety with smooth bitterness and pleasant aroma characteristics.

COUNTRY
UNITED STATES

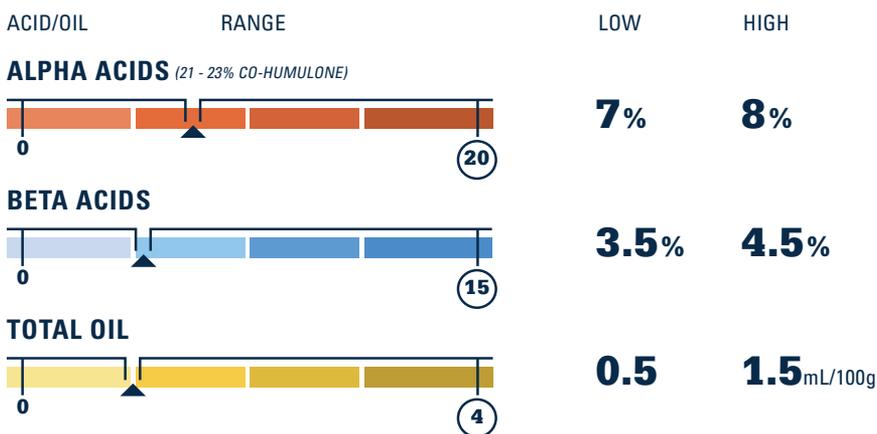
AROMA PROFILE
GRAPEFRUIT • LEMON ZEST



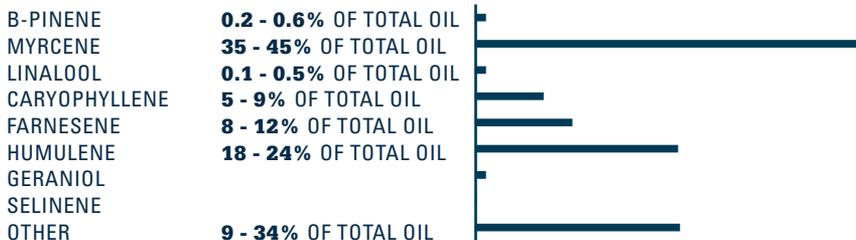
BEER STYLES

ENGLISH-STYLE ALE • GERMAN-STYLE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

ZEUS



Although genetically different, Zeus is often referred to as part of CTZ along with Columbus and Tomahawk®, a trio of similar hops.

COUNTRY

UNITED STATES

AROMA PROFILE

**PUNGENT • BLACK PEPPER
LICORICE • CURRY**



BEER STYLES

**IPA • PALE ALE • IMPERIAL ALE • STOUT
BARLEY WINE • LAGER**

BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (26 - 31% CO-HUMULONE)



14.5% 17.5%

BETA ACIDS



4% 5.5%

TOTAL OIL



2.5 4.5 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 1% OF TOTAL OIL
MYRCENE	45 - 55% OF TOTAL OIL
LINALOOL	0.4 - 0.6% OF TOTAL OIL
CARYOPHYLLENE	6 - 10% OF TOTAL OIL
FARNESENE	<1% OF TOTAL OIL
HUMULENE	9 - 14% OF TOTAL OIL
GERANIOL	0.2 - 0.5% OF TOTAL OIL
SELINENE	
OTHER	18 - 38% OF TOTAL OIL



YAKIMA CHIEF HOPS™

ZYTHOS®



BLEND

Named in honor of the Greek word for beer, Zythos® was designed to complement existing IPA and Pale Ale hop varieties. It is an excellent blend for any hop forward beer. Specific aroma descriptors include distinct tropical (pineapple) and citrus tones with slight pine characteristics.

COUNTRY

UNITED STATES

AROMA PROFILE

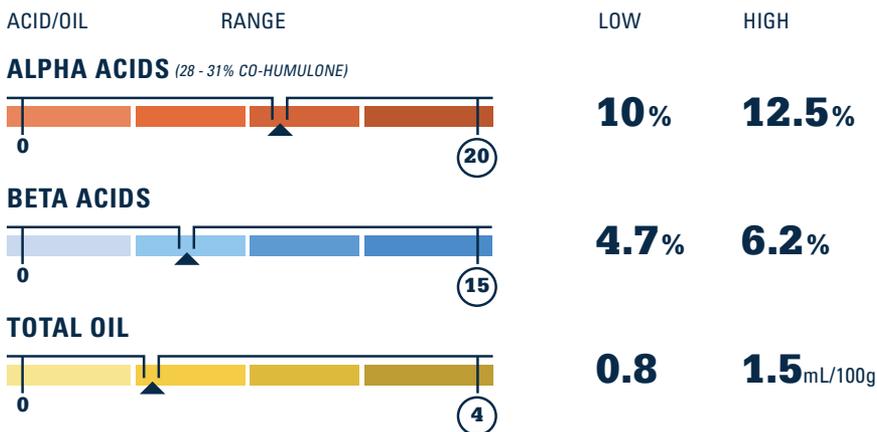
CITRUS • TROPICAL FRUIT

BEER STYLES

AMERICAN PALE ALE • IPA



BREWING VALUES



TOTAL OIL BREAKDOWN

B-PINENE	0.6 - 0.8% OF TOTAL OIL	
MYRCENE	30 - 50% OF TOTAL OIL	
LINALOOL	0.5 - 0.9% OF TOTAL OIL	
CARYOPHYLLENE	7 - 10% OF TOTAL OIL	
FARNESENE	1 - 3% OF TOTAL OIL	
HUMULENE	14 - 23% OF TOTAL OIL	
GERANIOL	0.3 - 1.2% OF TOTAL OIL	
SELINENE		
OTHER	11.1 - 46.6% OF TOTAL OIL	



YAKIMA CHIEF HOPS™