

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
MOAIC® 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

ACID/OIL

RANGE

LOW

HIGH

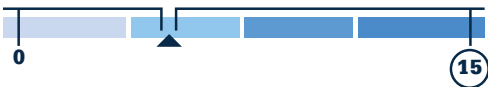
ALPHA ACIDS (37 - 45% CO-HUMULONE)



13%

16%

BETA ACIDS



4%

6%

TOTAL OIL



1

1.7 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

39 - 48% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

6 - 8% OF TOTAL OIL

FARNESENE

0 - 2% OF TOTAL OIL

HUMULENE

23 - 26% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

16 - 32% OF TOTAL OIL



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

ACID/OIL

RANGE

LOW

HIGH

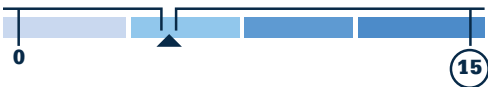
ALPHA ACIDS (30 - 34% CO-HUMULONE)



3.5%

6.5%

BETA ACIDS



4%

6%

TOTAL OIL



0.5

1.7 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

0.6 - 0.9% OF TOTAL OIL

MYRCENE

45 - 55% OF TOTAL OIL

LINALOOL

0.4 - 0.6% OF TOTAL OIL

CARYOPHYLLENE

9 - 12% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

15 - 22% OF TOTAL OIL

GERANIOL

0.4 - 0.7% OF TOTAL OIL

SELINENE

8 - 29% OF TOTAL OIL

OTHER



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

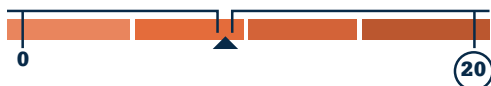
ACID/OIL

RANGE

LOW

HIGH

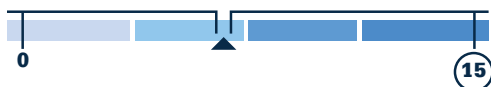
ALPHA ACIDS (20 - 24% CO-HUMULONE)



7%

11%

BETA ACIDS



5.5%

8%

TOTAL OIL



1

2.3 mL/100g

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

5 - 27% OF TOTAL OIL

OTHER



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

ACID/OIL

RANGE

LOW

HIGH

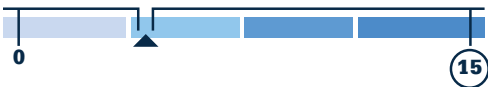
ALPHA ACIDS (20.5 - 21.3% CO-HUMULONE)



7.9%

8.3%

BETA ACIDS



3.8%

4.5%

TOTAL OIL



1.2

1.6 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

40% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

7.4% OF TOTAL OIL

FARNESENE

2 - 4% OF TOTAL OIL

HUMULENE

21% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

28.6% OF TOTAL OIL



YAKIMA CHIEF HOPS™

AURORA



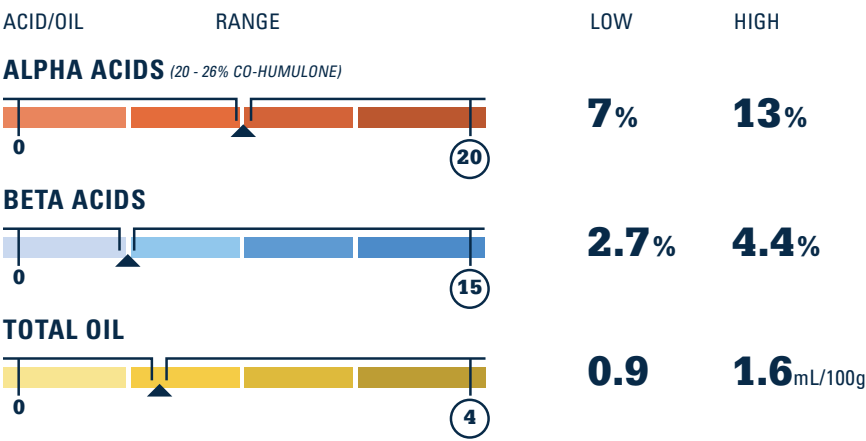
A diploid hybrid of Northern Brewer and a TG seedling of unknown origin, Aurora displays an intense yet pleasant aroma in finished beers. It is also known as Super Styrian.

| | |
|-----------------|---------------|
| COUNTRY | AROMA PROFILE |
| SLOVENIA | NOBLE |

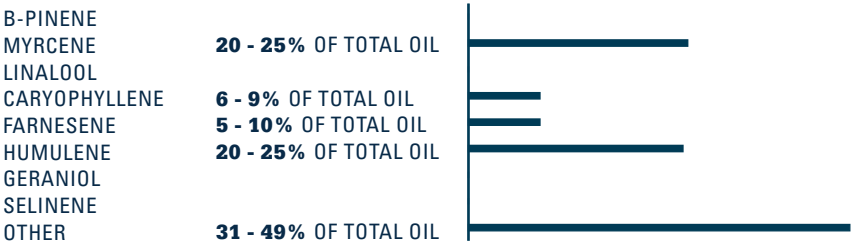
BEER STYLES

ENGLISH OR BELGIAN-STYLE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



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

ACID/OIL

RANGE

LOW

HIGH

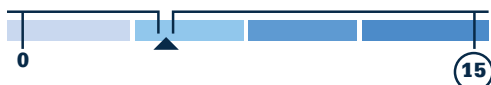
ALPHA ACIDS (38 - 45% CO-HUMULONE)



14%

16%

BETA ACIDS



4%

5.5%

TOTAL OIL



1.6

2.5 mL/100g

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.

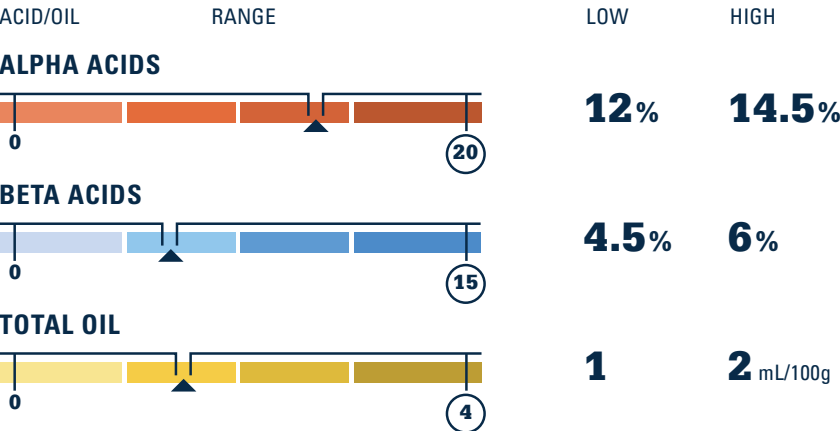
COUNTRY
UNITED STATES

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

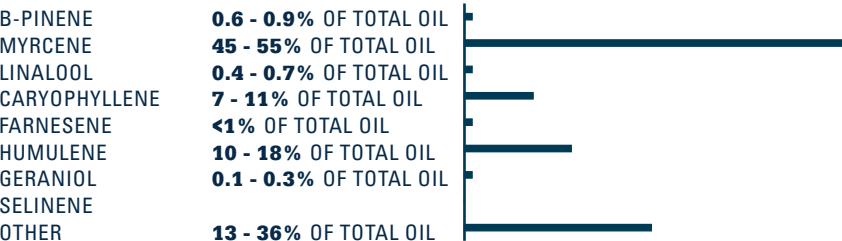
BEER STYLES
BELGIAN-STYLE ALE • PALE ALE • IPA



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

BOADICEA



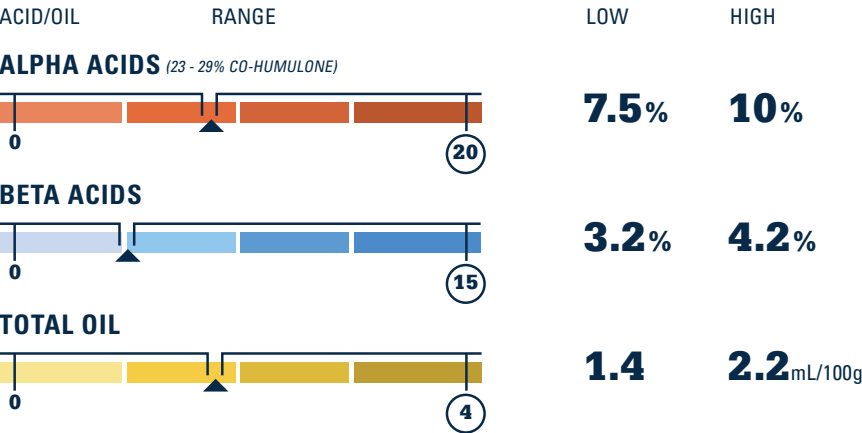
Bred at Wye College and released in 2004, Boadicea is a dwarf variety derived from open pollination of a second-generation wild, Japanese female hop. Its aroma is very mild with subtle grass, floral and fruit characteristics.

COUNTRY
**UNITED
KINGDOM**

AROMA PROFILE
FLORAL • ORCHARD BLOSSOM • RIPE FRUIT

BEER STYLES
PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN

| | |
|---------------|-----------------------|
| B-PINENE | 30 - 40% OF TOTAL OIL |
| MYRCENE | |
| LINALOOL | 15 - 19% OF TOTAL OIL |
| CARYOPHYLLENE | 0 - 5% OF TOTAL OIL |
| FARNESENE | 20% OF TOTAL OIL |
| HUMULENE | |
| GERANIOL | |
| SELINENE | |
| OTHER | 16 - 35% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

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

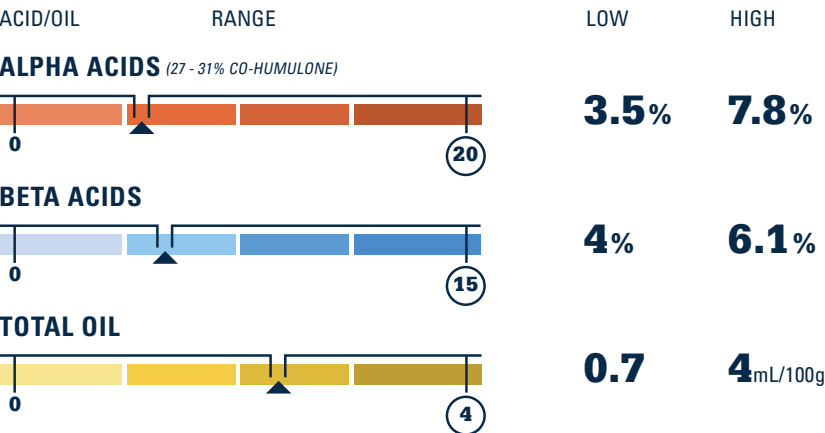
| | |
|-----------------|---------------|
| COUNTRY | AROMA PROFILE |
| SLOVENIA | NOBLE |

BEER STYLES

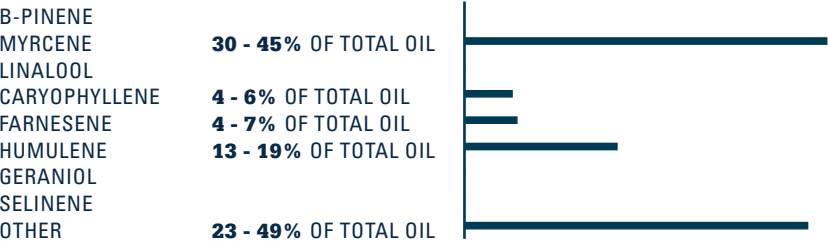
ENGLISH-STYLE ALE • LAGER • PILSNER

ENGLISH-STYLE BITTER

BREWING VALUES



TOTAL OIL BREAKDOWN



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

ACID/OIL

RANGE

LOW

HIGH

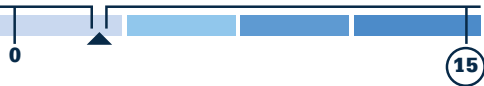
ALPHA ACIDS (20 - 25% CO-HUMULONE)



7.9%

8.5%

BETA ACIDS



2.4%

3.3%

TOTAL OIL



1.1

1.6 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

38% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

FARNESENE

HUMULENE

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.

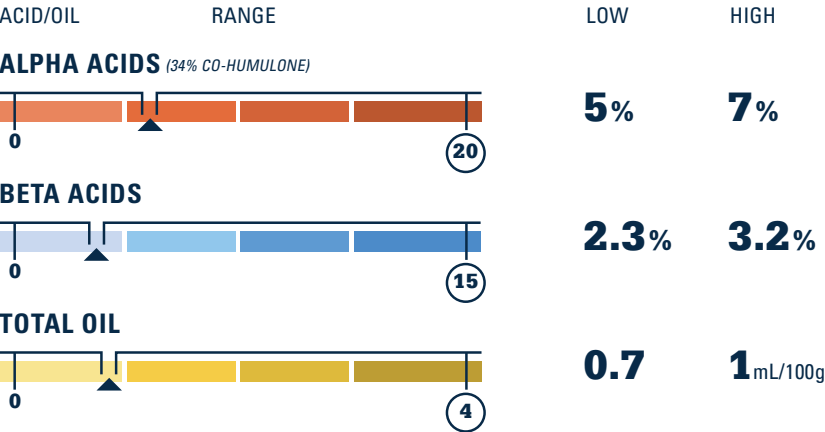
COUNTRY
**UNITED
KINGDOM**

AROMA PROFILE
BLACKCURRANT • LOGANBERRY • VANILLA

BEER STYLES

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

BREWING VALUES



TOTAL OIL BREAKDOWN

| | |
|---------------|-----------------------|
| B-PINENE | 36% OF TOTAL OIL |
| MYRCENE | |
| LINALOOL | 15% OF TOTAL OIL |
| CARYOPHYLLENE | 1% OF TOTAL OIL |
| FARNESENE | 30% OF TOTAL OIL |
| HUMULENE | |
| GERANIOL | |
| SELINENE | |
| OTHER | 18 - 33% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

BRAVO[®] BRAND



HOPSTEINER 0146

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

ACID/OIL

RANGE

LOW

HIGH

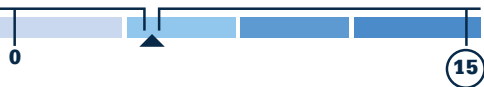
ALPHA ACIDS (28 - 35% CO-HUMULONE)



15%

18%

BETA ACIDS



3.5%

5.5%

TOTAL OIL



2

3.5 mL/100g

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

18 - 28% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS[™]

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

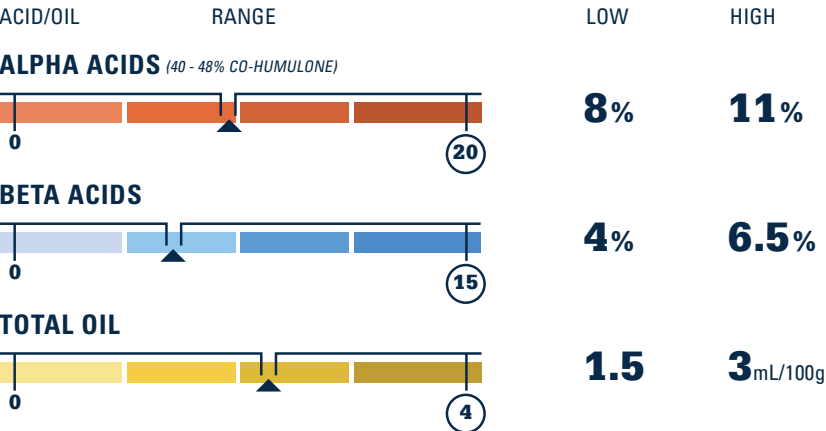
AROMA PROFILE
BLACKCURRANT • SPICY



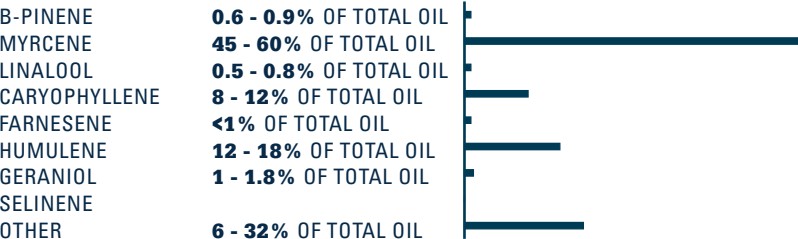
BEER STYLES

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

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (26% CO-HUMULONE)



17.5% 19.5%

BETA ACIDS



8% 10%

TOTAL OIL



1.7 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

22% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

5.8% OF TOTAL OIL

FARNESENE

0.3% OF TOTAL OIL

HUMULENE

15.2% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

57 - 63% OF TOTAL OIL



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

ACID/OIL

RANGE

LOW

HIGH

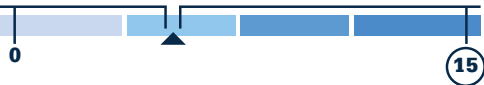
ALPHA ACIDS



8%

10%

BETA ACIDS



4%

6.5%

TOTAL OIL



1

2_{mL}/100g

TOTAL OIL BREAKDOWN

B-PINENE

0.6 - 0.8% OF TOTAL OIL

MYRCENE

40 - 55% OF TOTAL OIL

LINALOOL

0.5 - 0.8% OF TOTAL OIL

CARYOPHYLLENE

9 - 14% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

15 - 25% OF TOTAL OIL

GERANIOL

0.1 - 0.3% OF TOTAL OIL

SELINENE

3 - 34% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

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.

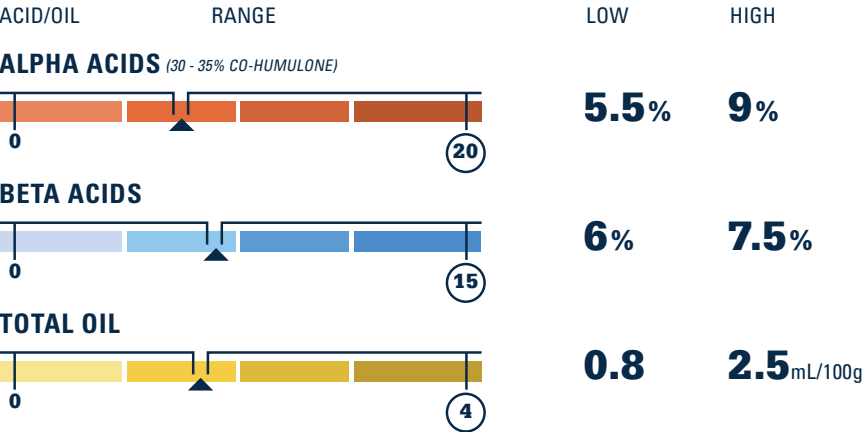
COUNTRY
UNITED STATES

AROMA PROFILE
GRAPEFRUIT • FLORAL • PINE

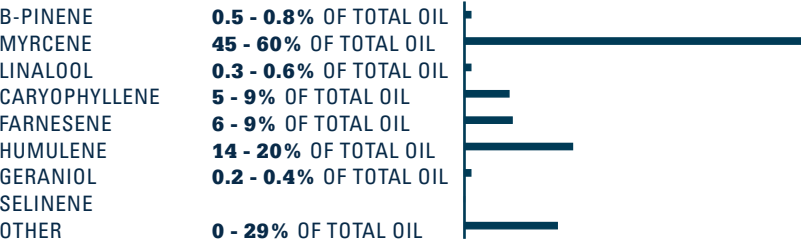


BEER STYLES
AMERICAN PALE ALE • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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.

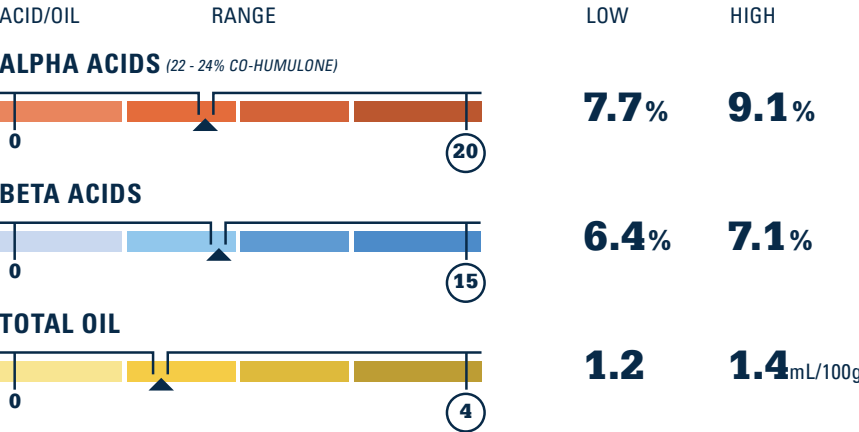
COUNTRY
UNITED STATES

AROMA PROFILE
**MELON • LEMON • LIME
SPICE**

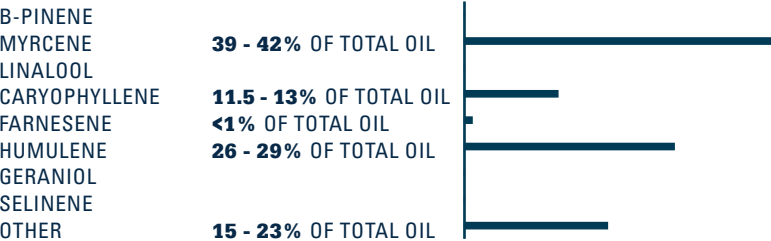
BEER STYLES
IPA



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

CELEIA

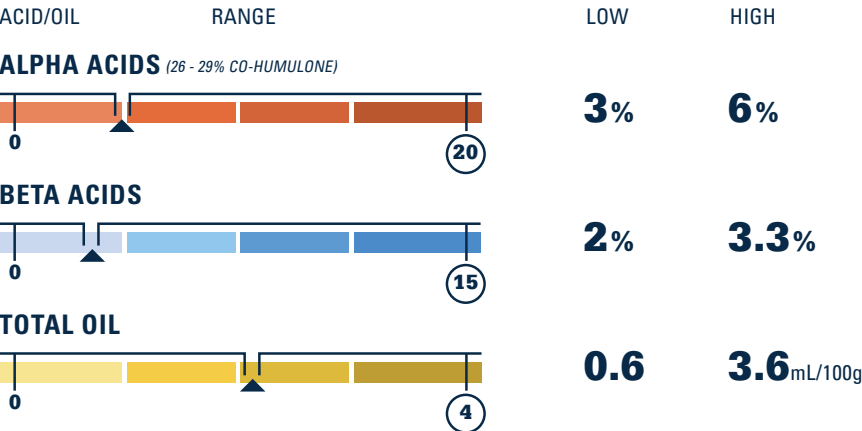


A hybrid of Styrian Golding, Aurora and a Slovenia wild hop, Celeia is known for its noble characteristics. It has widespread usage in lager and ale-style beers.

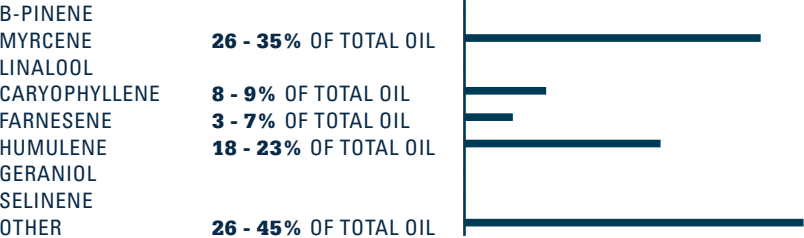
| | |
|-----------------|---------------|
| COUNTRY | AROMA PROFILE |
| SLOVENIA | NOBLE |

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

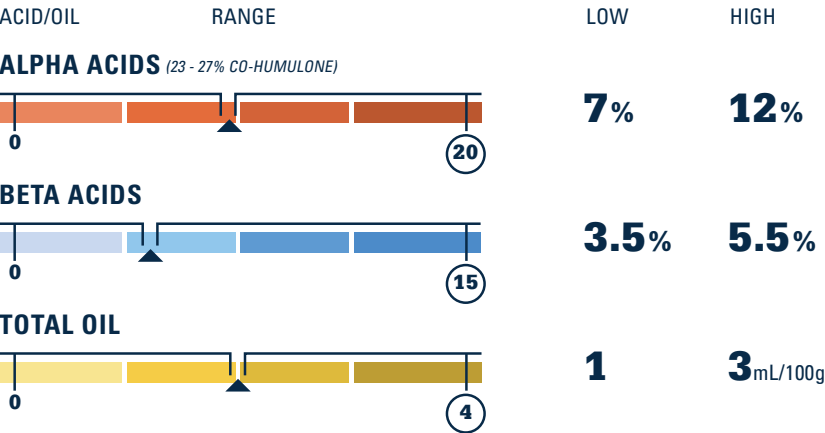
AROMA PROFILE
**LEMON • FLORAL
ORANGE BLOSSOM**

BEER STYLES

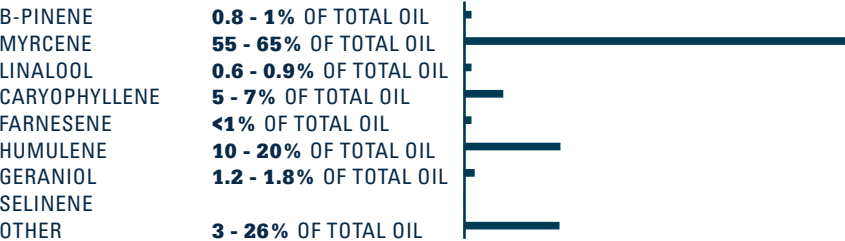
AMERICAN PALE ALE • IPA



BREWING VALUES



TOTAL OIL BREAKDOWN



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

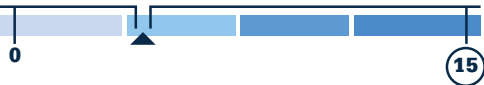
ALPHA ACIDS (20 - 25% CO-HUMULONE)



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

FARNESENE

HUMULENE

GERANIOL

SELINENE

OTHER

9.5% OF TOTAL OIL

<1% OF TOTAL OIL

25% OF TOTAL OIL

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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (33 - 35% CO-HUMULONE)



12%

14.5%

BETA ACIDS



8.5%

9.8%

TOTAL OIL



1.5

1.9 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE
MYRCENE
LINALOOL
CARYOPHYLLENE
FARNESENE
HUMULENE
GERANIOL
SELINENE
OTHER

45 - 55% OF TOTAL OIL

9 - 12% OF TOTAL OIL

<1% OF TOTAL OIL

12 - 15% OF TOTAL OIL

17 - 33% OF TOTAL OIL



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

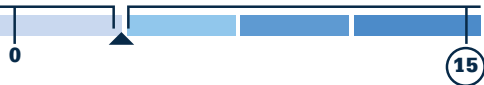
HIGH

ALPHA ACIDS (27 - 31% CO-HUMULONE)



11.5% 15%

BETA ACIDS



3% 4%

TOTAL OIL



1 2.5 mL/100g

TOTAL OIL BREAKDOWN

| | | |
|---------------|-------------------------|--|
| B-PINENE | 0.3 - 0.5% OF TOTAL OIL | |
| MYRCENE | 20 - 30% OF TOTAL OIL | |
| LINALOOL | 0.3 - 0.5% OF TOTAL OIL | |
| CARYOPHYLLENE | 9 - 11% OF TOTAL OIL | |
| FARNESENE | <1% OF TOTAL OIL | |
| HUMULENE | 18 - 24% OF TOTAL OIL | |
| GERANIOL | 0.7 - 1% OF TOTAL OIL | |
| SELINENE | | |
| OTHER | 32 - 51% OF TOTAL OIL | |



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

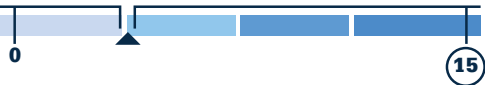
ALPHA ACIDS (20 - 24% CO-HUMULONE)



11%

15%

BETA ACIDS



3%

4.5%

TOTAL OIL



1.5

3 mL/100g

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

7 - 25% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS[™]

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

ACID/OIL

RANGE

LOW

HIGH

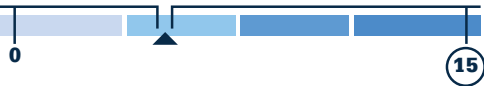
ALPHA ACIDS (36 - 41% CO-HUMULONE)



6%

9%

BETA ACIDS



4%

6%

TOTAL OIL



0.5

1 mL/100g

TOTAL OIL BREAKDOWN

| | |
|---------------|-------------------------|
| B-PINENE | 0.5 - 0.7% OF TOTAL OIL |
| MYRCENE | 38 - 46% OF TOTAL OIL |
| LINALOOL | 0.4 - 0.8% OF TOTAL OIL |
| CARYOPHYLLENE | 8 - 10% OF TOTAL OIL |
| FARNESENE | <1% OF TOTAL OIL |
| HUMULENE | 15 - 20% OF TOTAL OIL |
| GERANIOL | 0.6 - 0.9% OF TOTAL OIL |
| SELINENE | |
| OTHER | 21 - 37% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

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

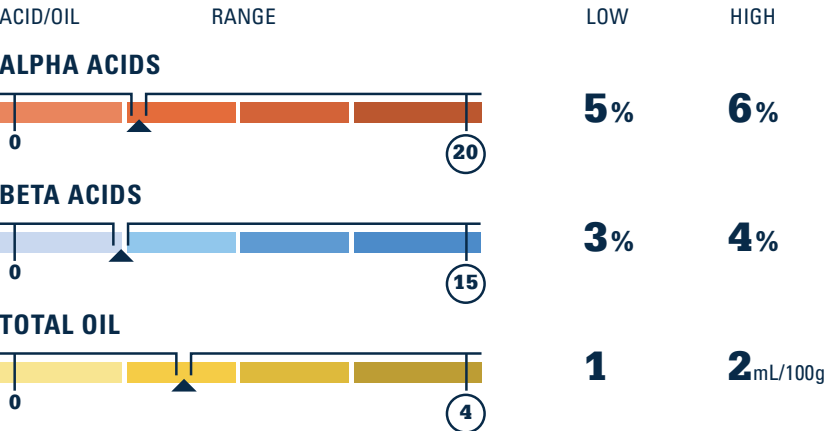
AROMA PROFILE
NOBLE

BEER STYLES

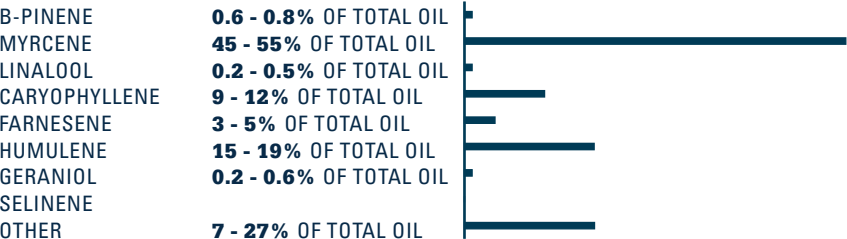
ENGLISH-STYLE ALE



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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

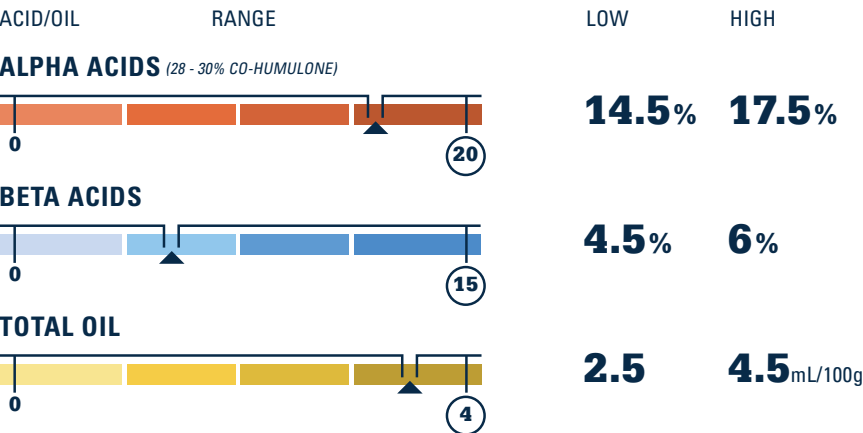
AROMA PROFILE
**BLACK PEPPER • DANK
RED FRUIT**

BEER STYLES

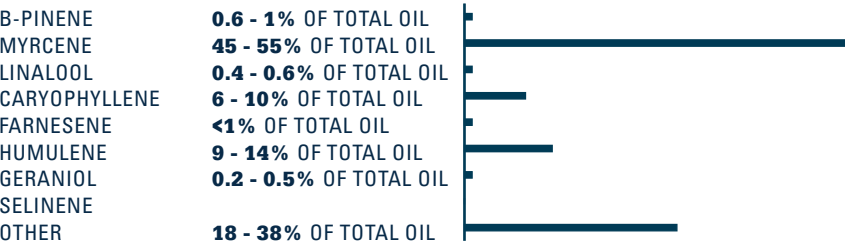
IPA • IMPERIAL ALE • PALE ALE



BREWING VALUES



TOTAL OIL BREAKDOWN



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.

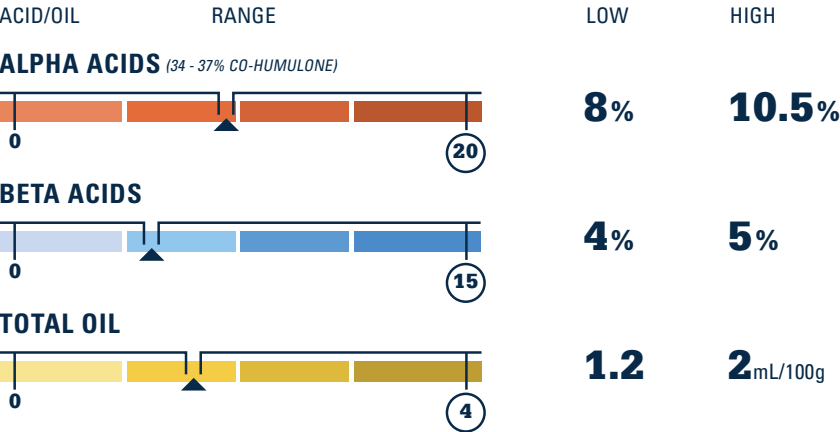
COUNTRY
UNITED STATES

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 | |



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (23 - 26% CO-HUMULONE)



3%

6%

BETA ACIDS



5%

8.5%

TOTAL OIL



0.8

2.3 mL/100g

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

<1% - 43% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

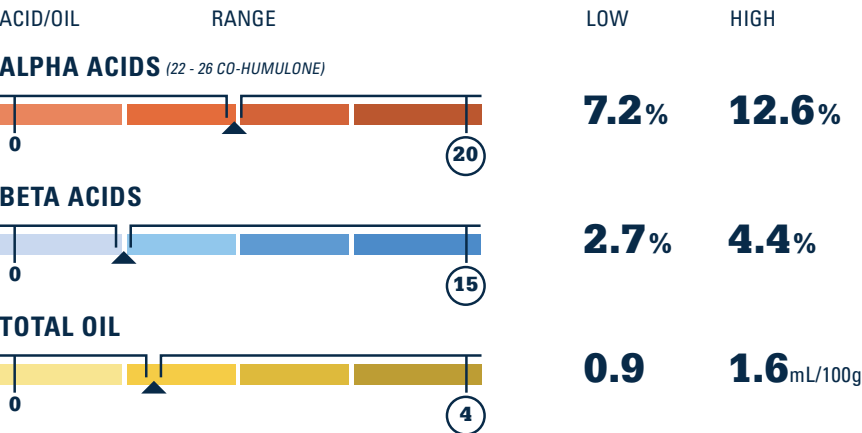
Developed as a cross between German Magnum and a wild Slovenian male, Dana displays subtle floral and citrus characteristics.

| | |
|-----------------|------------------------|
| COUNTRY | AROMA PROFILE |
| SLOVENIA | FLORAL • CITRUS |

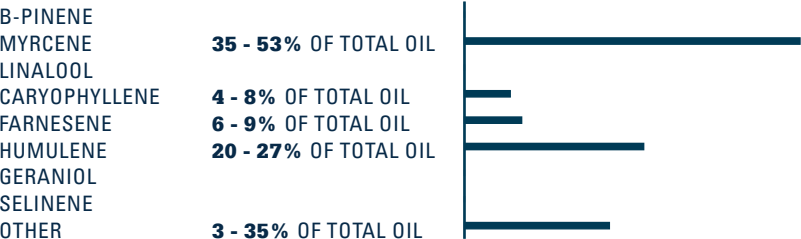
BEER STYLES

PALE ALE • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



DR. RUDI™ BRAND



68-4-96

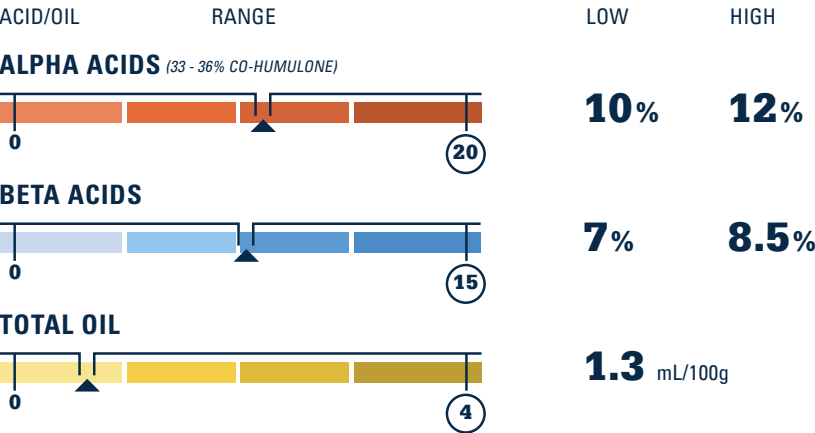
Developed at the New Zealand Horticultural Research Centre (now New Zealand Institute for Plant and Food Research) and released in 1976 as “Super Alpha”, Dr. Rudi™ is a triploid variety bred from New Zealand Smoothcone. Its name was changed to Dr. Rudi™ in 2012. Dr. Rudi™ works well in single-hopped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

COUNTRY
**NEW
ZEALAND**

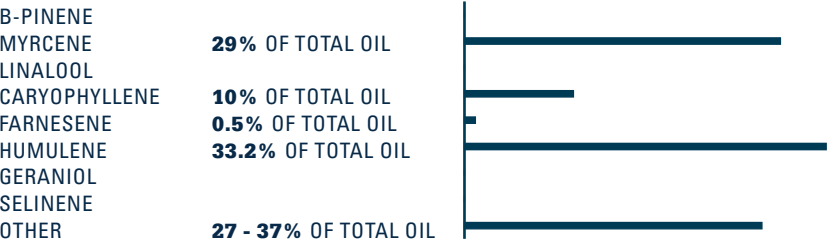
AROMA PROFILE
RESIN • PINE • LEMONGRASS

BEER STYLES
ALE • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

EAST KENT GOLDING

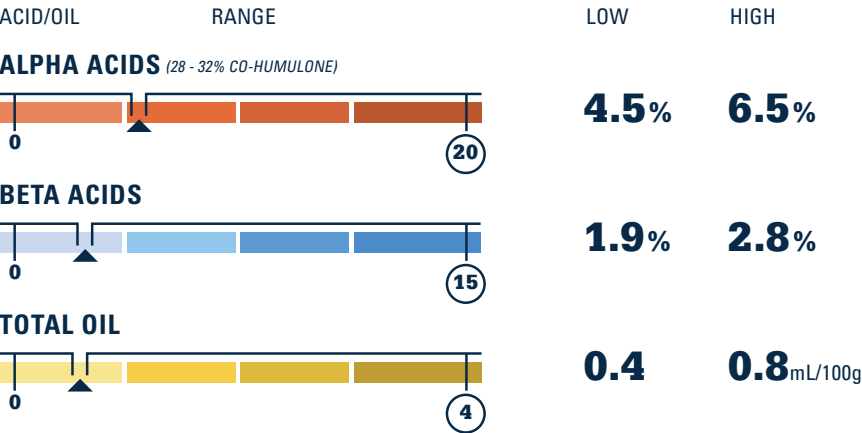
Developed from wild Canterbury Whitebine and released to market in the late 1700s, East Kent Golding is the quintessential English variety. Its ideal application is late aroma hopping or post-fermentation.

COUNTRY
**UNITED
KINGDOM**

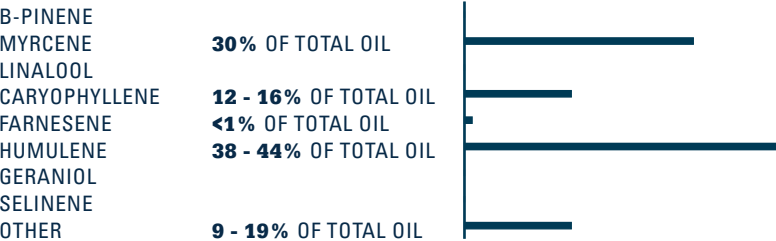
AROMA PROFILE
**LAVENDER • HONEY • LEMON • THYME
ORANGE • GRAPEFRUIT**

BEER STYLES
PORTER • STOUT • ENGLISH-STYLE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



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

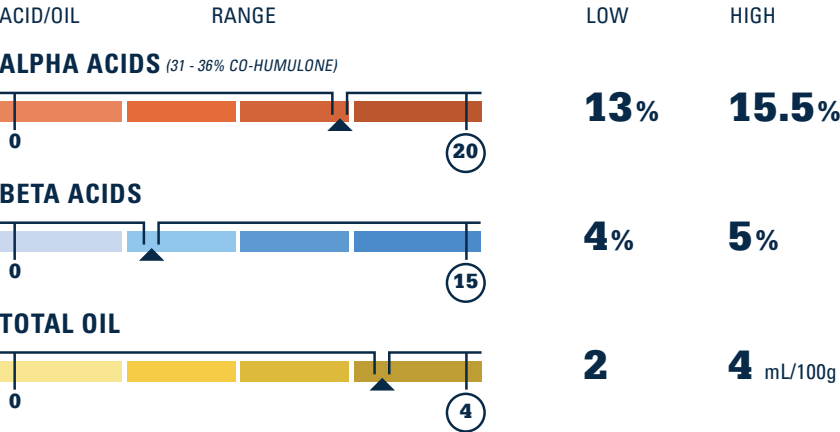
AROMA PROFILE
**MELON • BERRY • LIME • APPLE
PAPAYA • GREEN PEPPER
MANGO • MANDARIN ORANGE**



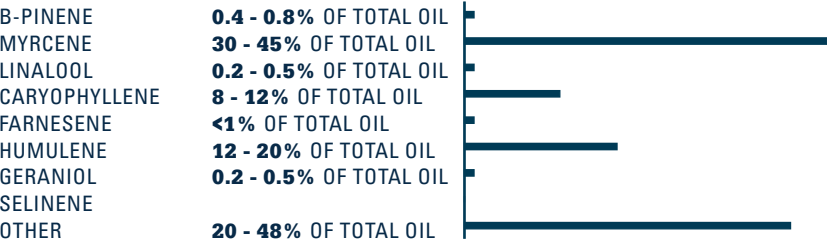
BEER STYLES

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

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

EL DORADO® BRAND

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

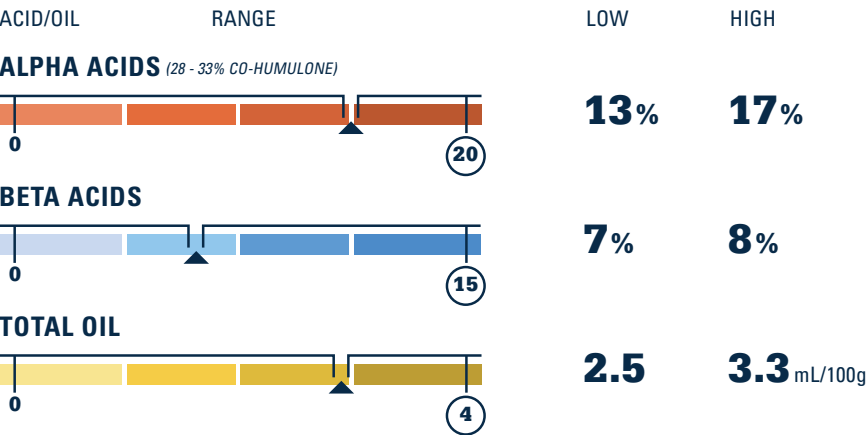
COUNTRY
UNITED STATES

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

| | |
|---------------|------------------------|
| B-PINENE | 0 - 1% OF TOTAL OIL |
| MYRCENE | 55 - 60% OF TOTAL OIL |
| LINALOOL | 0 - 1.5% OF TOTAL OIL |
| CARYOPHYLLENE | 6 - 8% OF TOTAL OIL |
| FARNESENE | 0 - 0.2% OF TOTAL OIL |
| HUMULENE | 10 - 15% OF TOTAL OIL |
| GERANIOL | 0 - 0.05% OF TOTAL OIL |
| SELINENE | |
| OTHER | 14 - 29% OF TOTAL OIL |



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

12 - 18% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

16 - 22% OF TOTAL OIL

GERANIOL

SELINENE

2 - 4% OF TOTAL OIL

OTHER

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

ACID/OIL

RANGE

LOW

HIGH

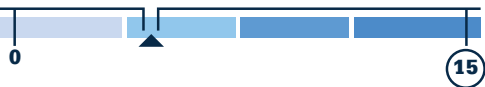
ALPHA ACIDS (30 - 36% CO-HUMULONE)



7.5%

10.6%

BETA ACIDS



3.8%

5.3%

TOTAL OIL



1.2

1.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

27 - 37% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

FARNESENE

5 - 8% OF TOTAL OIL

HUMULENE

3 - 10% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

45 - 65% OF TOTAL OIL



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 Tettang, 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

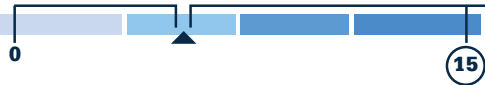
HIGH

ALPHA ACIDS (38 - 40% CO-HUMULONE)



13.5% 16.5%

BETA ACIDS



4.8% 6.4%

TOTAL OIL



2.4 3mL/100g

TOTAL OIL BREAKDOWN

TOTAL OIL BREAKDOWN UNAVAILABLE



YAKIMA CHIEF HOPS™

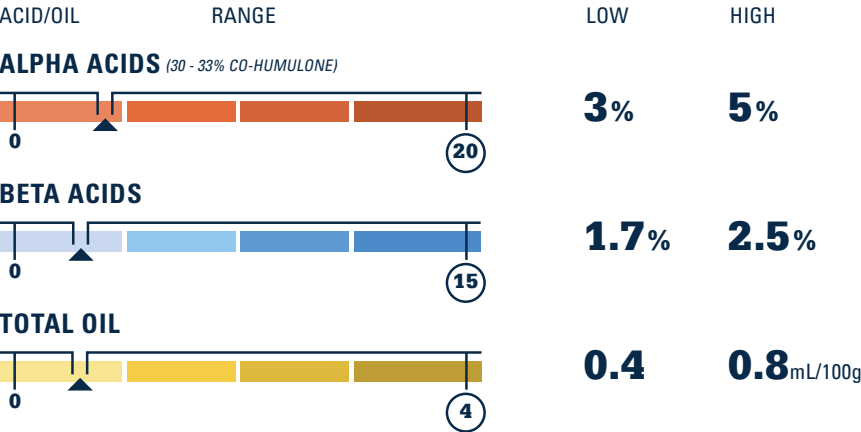
Found as a chance seedling in 1987 and grown as an ornamental garden plant until 2004, Epic was expanded for commercial production in winter 2014-2015. The history of the field, combined with the oil composition of Epic, strongly suggests that the lineage includes Alliance hops. Early brewing experience 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**

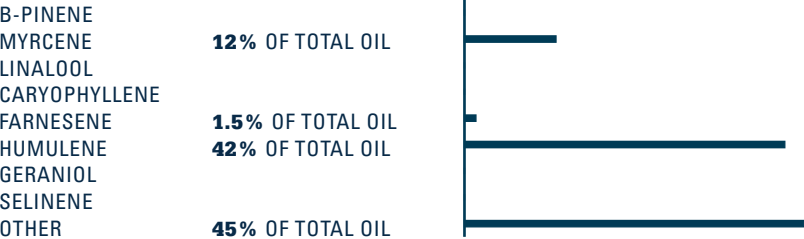
AROMA PROFILE
FRUITY • BERRY

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

ACID/OIL

RANGE

LOW

HIGH

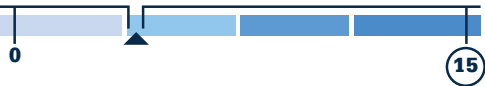
ALPHA ACIDS (~40% CO-HUMULONE)



7.3%

14.9%

BETA ACIDS



3%

5.3%

TOTAL OIL



~0.9 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

55 - 65% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

7 - 13% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

<1% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

20 - 37% OF TOTAL OIL



YAKIMA CHIEF HOPS™

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.

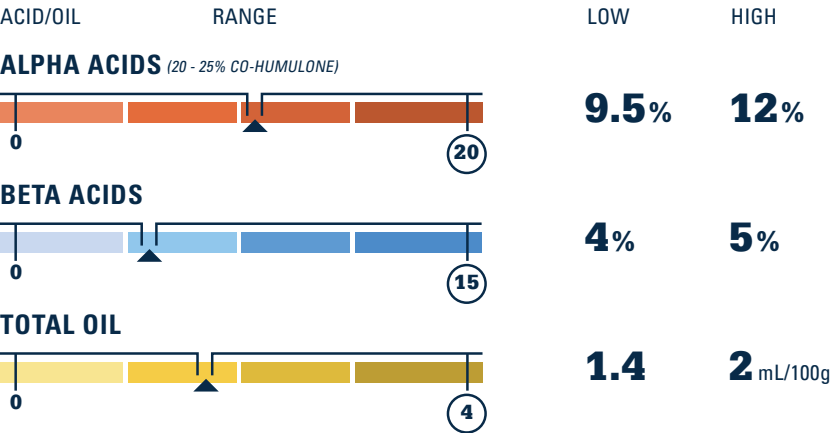
COUNTRY
UNITED STATES

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.

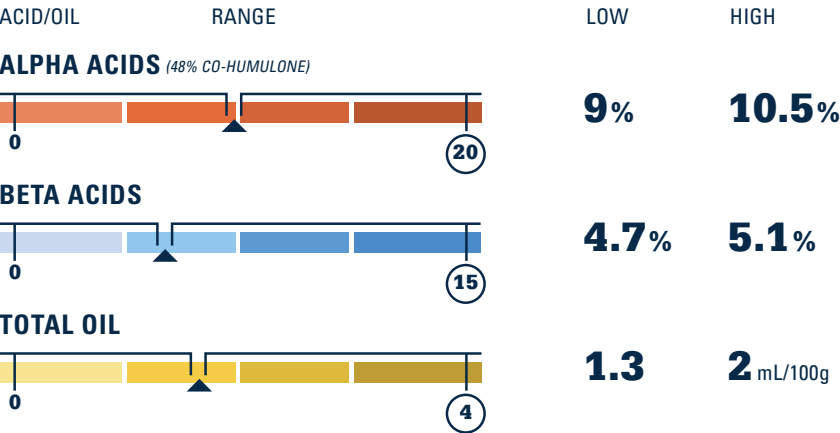
COUNTRY
UNITED STATES

AROMA PROFILE
FRUIT • CITRUS • SPICE • EARTH

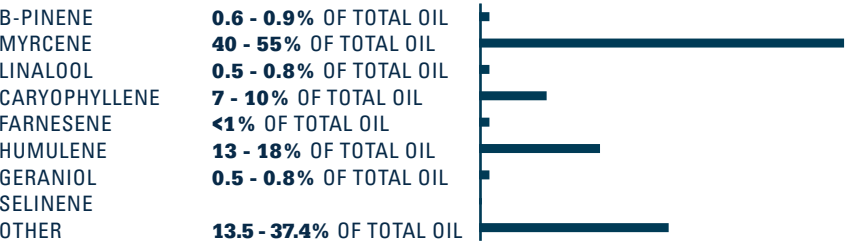


BEER STYLES
AMERICAN PALE ALE • IPA • DOUBLE IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

FIRST GOLD



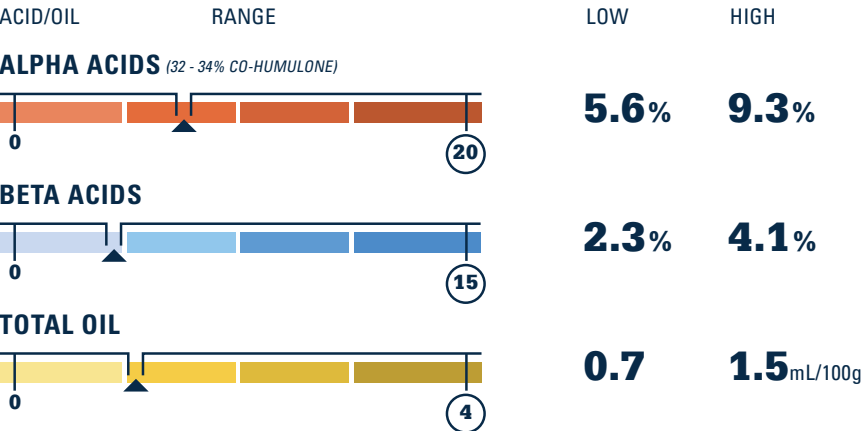
Bred at Wye College in 1995, First Gold is a cross between WGV (Whitbread Golding Variety) and a dwarf male. It features many of the flavor characteristics of WGV and has found favor in both general kettle and late or dry hopping applications.

COUNTRY
**UNITED
KINGDOM**

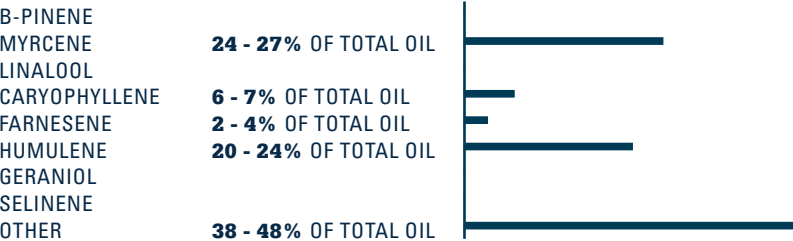
AROMA PROFILE
**GERANIUM • MAGNOLIA • APRICOT
TANGERINE • ORANGE MARMALADE**

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

BREWING VALUES



TOTAL OIL BREAKDOWN



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.

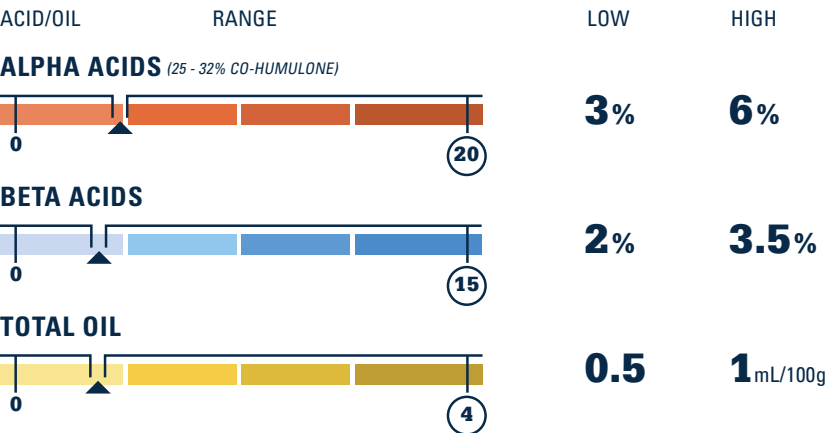
COUNTRY
UNITED STATES

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

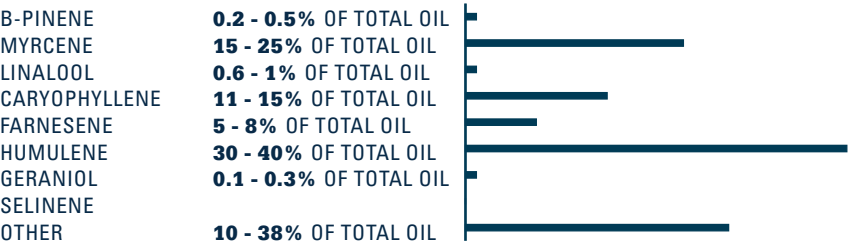
BEER STYLES
PALE ALE • BROWN ALE • STOUT



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

FUGGLE



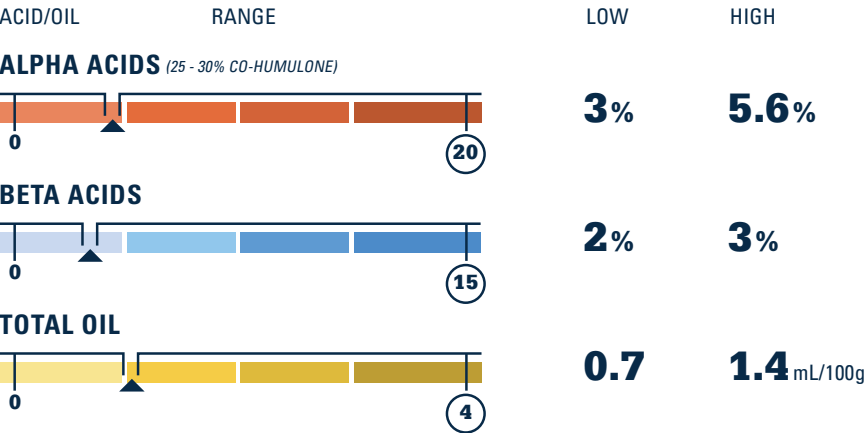
Selected from a seedling in 1861 and released in 1875, Fuggle is the most revered and famous English variety. It is known for its classic English aroma and is often used in conjunction with Golding.

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 | |
| CARYOPHYLLENE | 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 |



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (32 - 42% CO-HUMULONE)



11.6% 16%

BETA ACIDS



5% 6.9%

TOTAL OIL



3 5_{mL/100g}

TOTAL OIL BREAKDOWN

B-PINENE

33 - 69% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

FARNESENE

HUMULENE

GERANIOL

SELINENE

OTHER

7 - 9% OF TOTAL OIL

4 - 4% OF TOTAL OIL

1 - 2% OF TOTAL OIL

4 - 8% OF TOTAL OIL

8 - 51% OF TOTAL OIL



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.

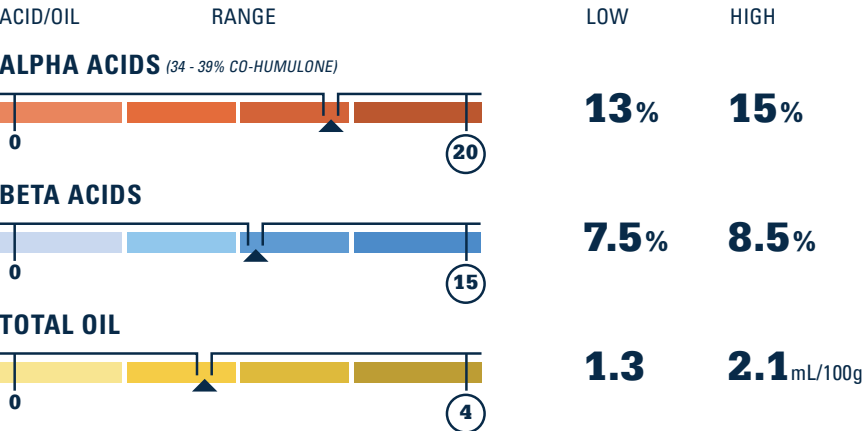
COUNTRY
UNITED STATES

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

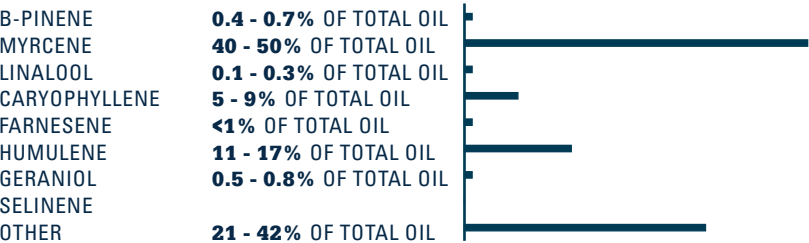
BEER STYLES
AMERICAN ALE • PORTER • STOUT



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

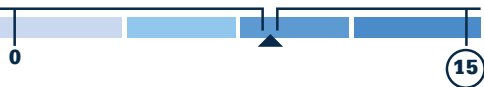
ALPHA ACIDS (13 - 16% CO-HUMULONE)



4%

7.5%

BETA ACIDS



7%

10%

TOTAL OIL



0.5

1.5 mL/100g

TOTAL OIL BREAKDOWN

| | |
|---------------|-------------------------|
| B-PINENE | 0.2 - 0.6% OF TOTAL OIL |
| MYRCENE | 35 - 45% OF TOTAL OIL |
| LINALOOL | 0.8 - 1.1% OF TOTAL OIL |
| CARYOPHYLLENE | 8 - 13% OF TOTAL OIL |
| FARNESENE | <1% OF TOTAL OIL |
| HUMULENE | 25 - 35% OF TOTAL OIL |
| GERANIOL | 0.2 - 0.3% OF TOTAL OIL |
| SELINENE | |
| OTHER | 4 - 30% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

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

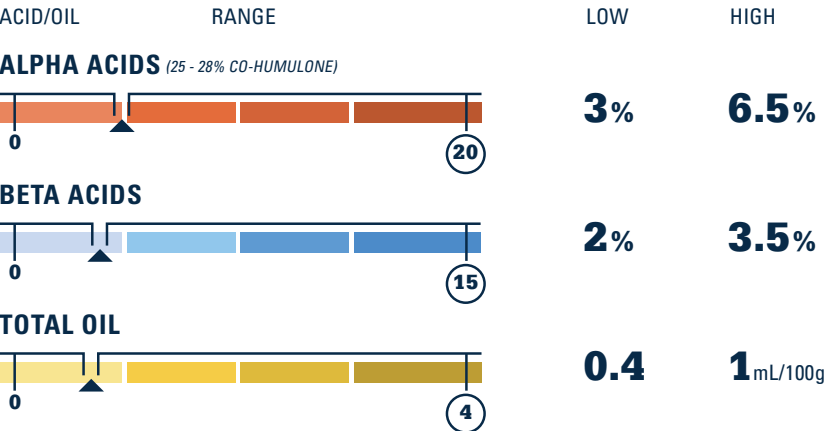
AROMA PROFILE
DELICATE • SWEET FLORAL

BEER STYLES

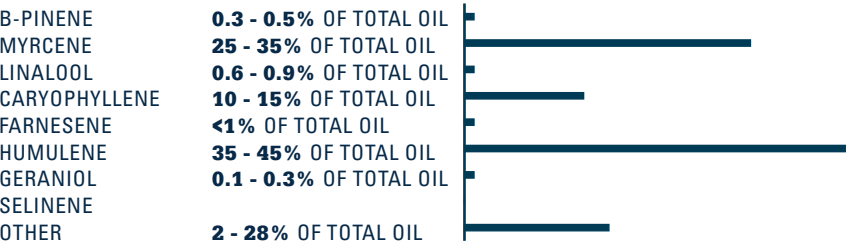
PALE ALE • STOUT • BITTER • BARLEY WINE



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (38 - 39% CO-HUMULONE)



11%

14%

BETA ACIDS



6.5%

7%

TOTAL OIL



1.1

mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

38% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

9.2% OF TOTAL OIL

FARNESENE

0.3% OF TOTAL OIL

HUMULENE

28.2% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

24 - 34% OF TOTAL OIL



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

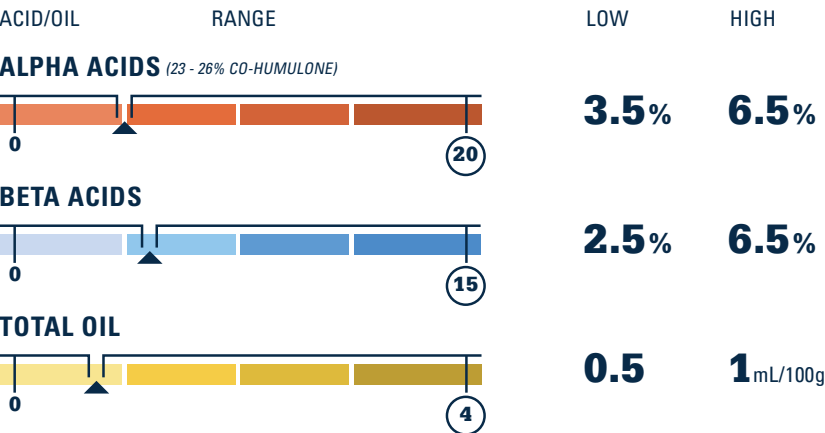
AROMA PROFILE
NOBLE

BEER STYLES

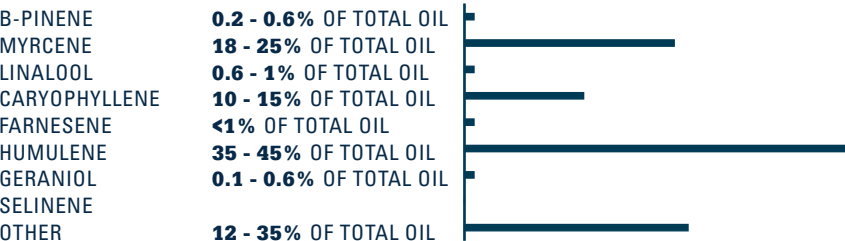
BOCK • PILSNER • LAGER



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (22 - 26% CO-HUMULONE)



9%

12%

BETA ACIDS



4.5%

5.5%

TOTAL OIL



1.2

1.5 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

50 - 75% OF TOTAL OIL

MYRCENE

0.2 - 0.5% OF TOTAL OIL

LINALOOL

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

10 - 45% OF TOTAL OIL

CARYOPHYLLENE

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

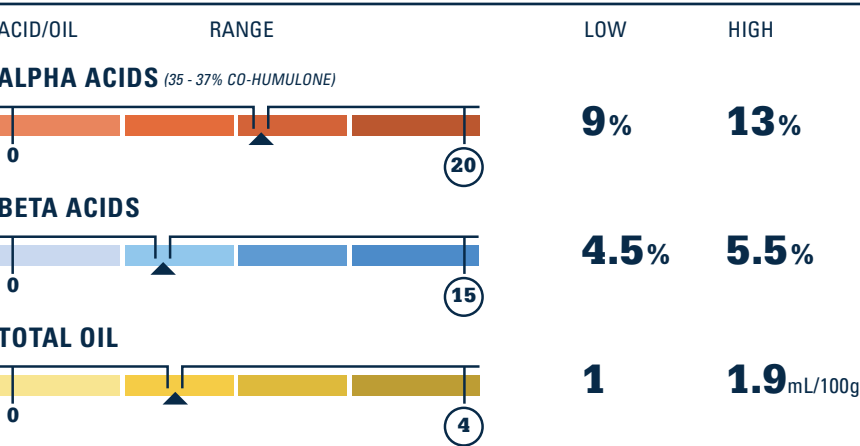


Bred at Wye College and registered in 1996, Herald is a sister to Pioneer and Pilgrim hops. It is known for its clean bittering characteristics and fresh citrus flavors.

| | |
|----------------|---------------------|
| COUNTRY | AROMA PROFILE |
| UNITED KINGDOM | 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 | 7% OF TOTAL OIL | |
| FARNESENE | <1% OF TOTAL OIL | |
| HUMULENE | 15% OF TOTAL OIL | |
| GERANIOL | | |
| SELINENE | | |
| OTHER | 37 - 44% OF TOTAL OIL | |



HERKULES



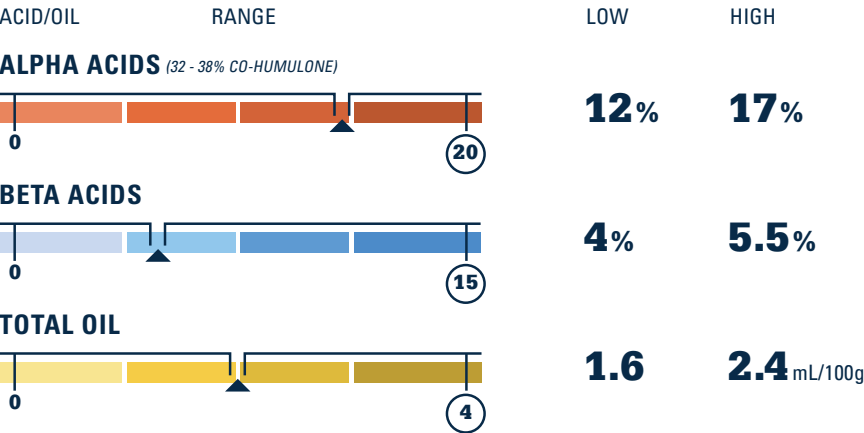
Bred at the Hop Research Center in Hüll and released in 2006, Herkules is a high alpha, bittering hop that holds true to its name. It is a daughter of Taurus with some citrus and melon characteristics.

| | |
|----------------|-----------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | ROBUST • MELON |

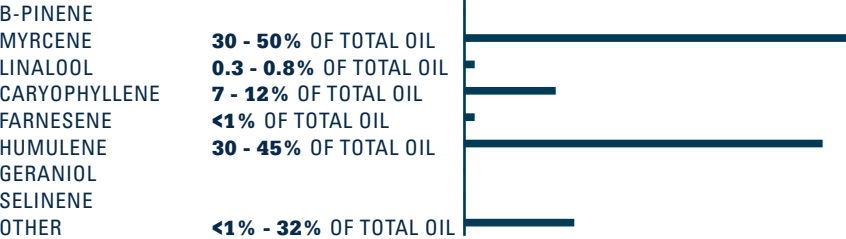
BEER STYLES

GERMAN-STYLE LAGER • ALE • ALTBIER

BREWING VALUES



TOTAL OIL BREAKDOWN



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

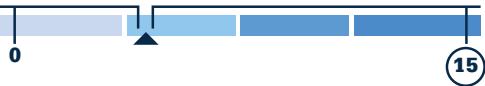
ALPHA ACIDS (17 - 25% CO-HUMULONE)



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

CARYOPHYLLENE

8 - 13% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

20 - 30% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

25 - 56% OF TOTAL OIL



YAKIMA CHIEF HOPS™

HORIZON



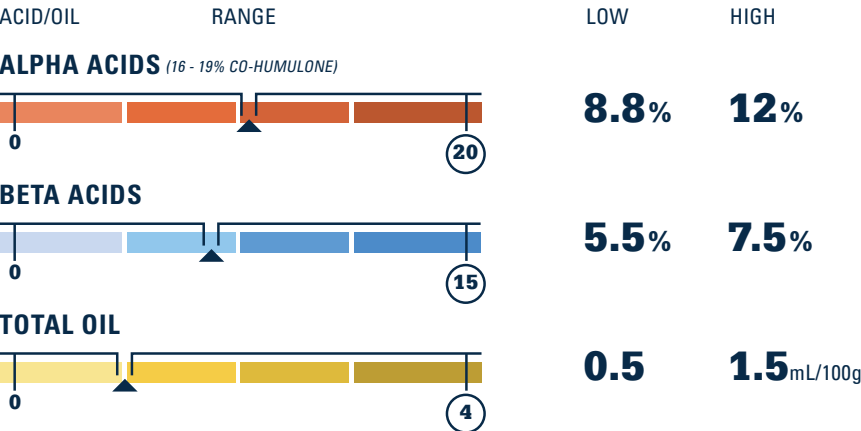
Bred in Oregon in 1970 and released in 1997, Horizon is a descendant of Brewer's Gold and half-sister to Nugget. Its low co-humulone is similar to noble varieties and provides smoothness to beer, however alpha acid levels can reach as high as 12%. Horizon can be utilized in every stage of the brewing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

COUNTRY
UNITED STATES

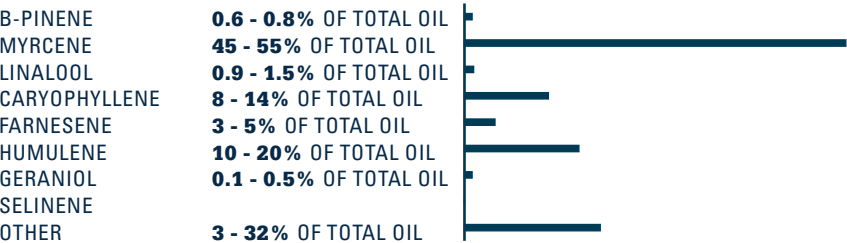
AROMA PROFILE
FLORAL BOUQUET • SPICY

BEER STYLES
ALE • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

HUELL MELON



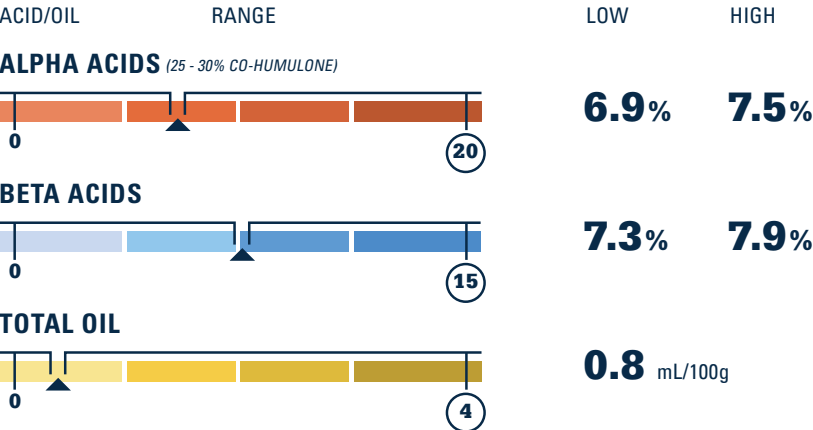
Bred at the Hop Research Institute in Hüll and released in 2012, Huell (Hüll) Melon was commercialized as a new, German aroma variety in response to growing demand from the craft beer industry for distinct flavor profiles. It displays bold flavors that are not associated with typical hop variety aromas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

COUNTRY
GERMANY

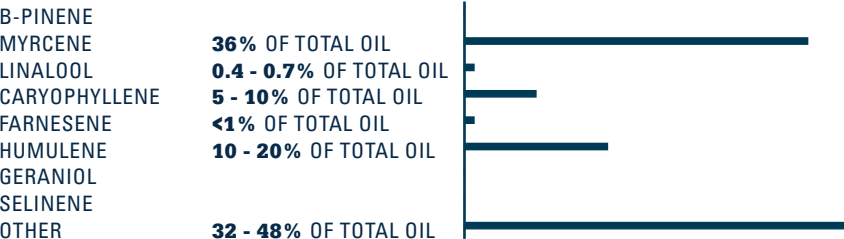
AROMA PROFILE
**HONEYDEW MELON • STRAWBERRY
TROPICAL FRUIT • ORANGE • VANILLA**

BEER STYLES
WHEAT • BELGIAN-STYLE ALE • PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

IDAHO 7™ BRAND



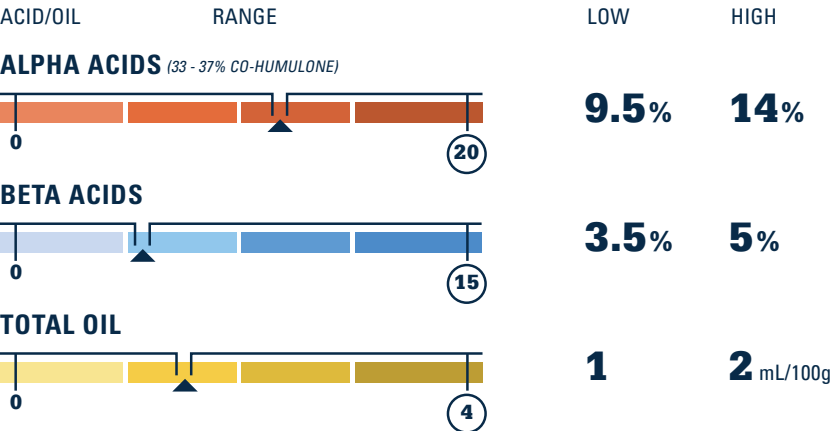
Idaho 7™ was bred and released by Jackson Farms near Boise, Idaho. Idaho 7™ presents as pungent tropical fruit and citrus (think apricot, orange, red grapefruit, papaya) with big notes of resiny pine and hints of black tea.

COUNTRY
UNITED STATES

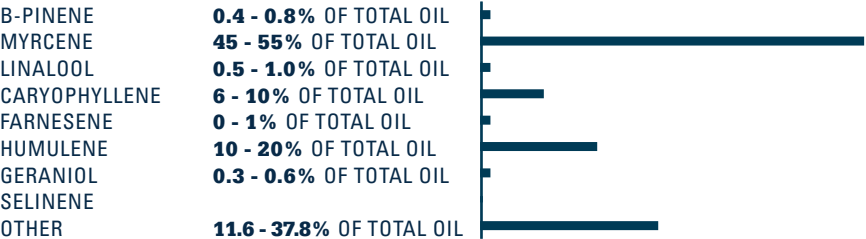
AROMA PROFILE
**PINEAPPLE • PEACH • PINE • RESIN • MANGO
BLACK TEA**

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

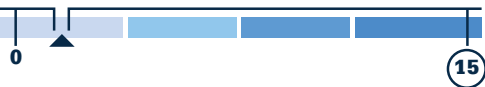
PERCENTAGE

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 |
| CARYOPHYLLENE | 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

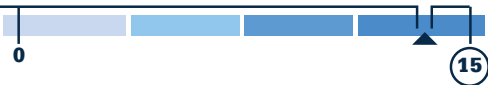
ALPHA ACIDS (34 - 37% CO-HUMULONE)



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



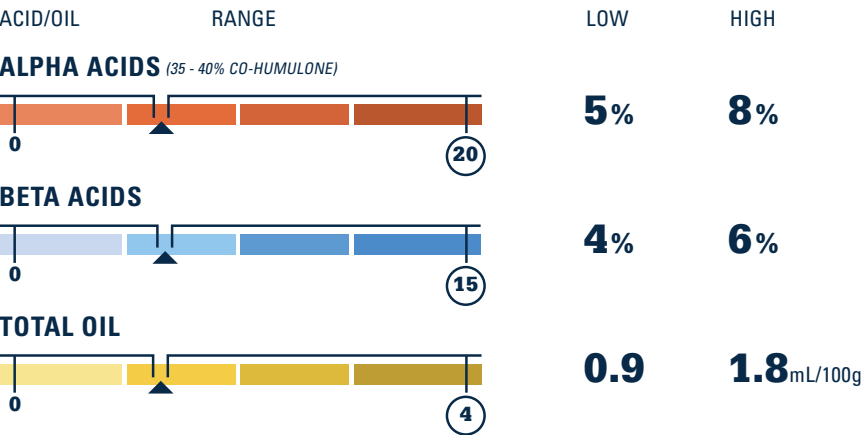
Selected from breeding material with origin in Russian wild hops, Kazbek was released in 2008. It is named after the highest peak within the middle Caucasus mountain range.

COUNTRY
**CZECH
REPUBLIC**

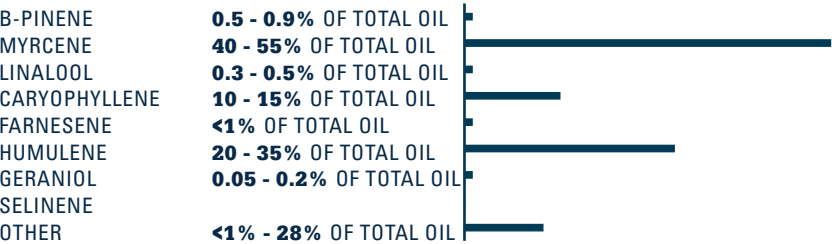
AROMA PROFILE
SPICY • LEMON

BEER STYLES
PILSNER • LAGER • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



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

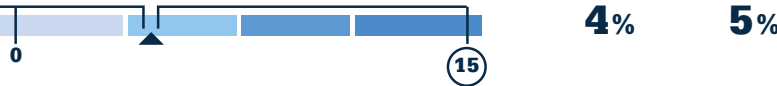
BREWING VALUES

| ACID/OIL | RANGE | LOW | HIGH |
|----------|-------|-----|------|
|----------|-------|-----|------|

ALPHA ACIDS (21% CO-HUMULONE)



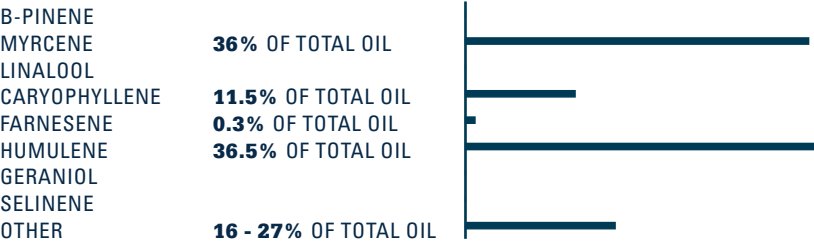
BETA ACIDS



TOTAL OIL



TOTAL OIL BREAKDOWN



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

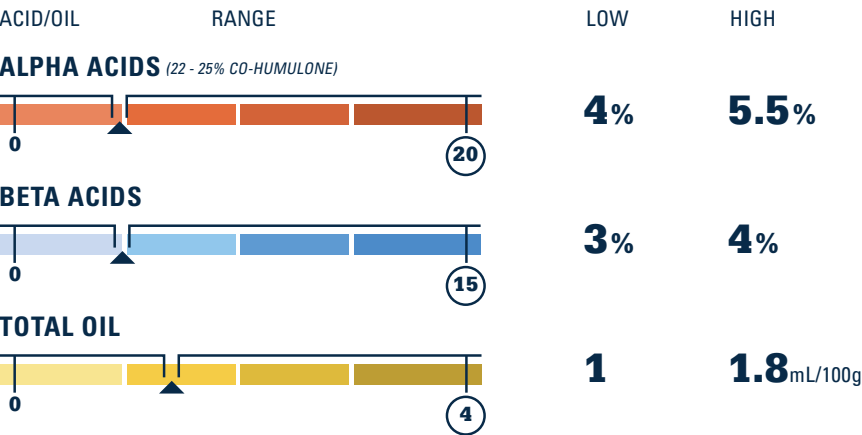
AROMA PROFILE
**NOBLE • FLORAL • HERBAL
SPICY • DELICATE • LEMON**

BEER STYLES

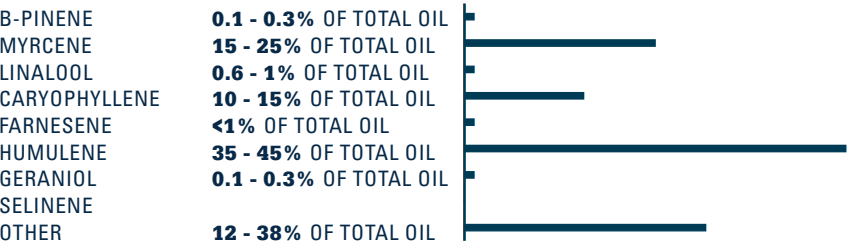
PILSNER • BOCK • WHEAT • LAGER • KÖLSCH



BREWING VALUES



TOTAL OIL BREAKDOWN



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

ACID/OIL

RANGE

LOW

HIGH

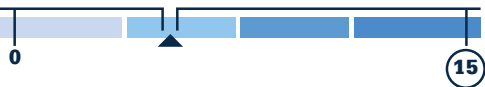
ALPHA ACIDS (20-23% CO-HUMULONE)



13%

17%

BETA ACIDS



4%

6.5%

TOTAL OIL



1.8

3.4 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

0.6 - 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

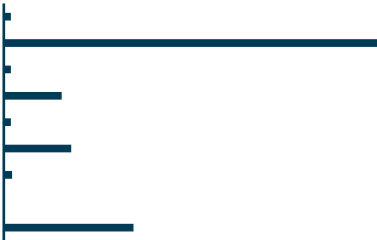
GERANIOL

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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (23 - 28% CO-HUMULONE)



12%

15.5%

BETA ACIDS



5.5%

8%

TOTAL OIL



1.5

2.5 mL/100g

TOTAL OIL BREAKDOWN

| | |
|---------------|-------------------------|
| B-PINENE | 0.4 - 0.8% OF TOTAL OIL |
| MYRCENE | 30 - 40% OF TOTAL OIL |
| LINALOOL | 0.4 - 0.7% OF TOTAL OIL |
| CARYOPHYLLENE | 7 - 12% OF TOTAL OIL |
| FARNESENE | <1% OF TOTAL OIL |
| HUMULENE | 25 - 30% OF TOTAL OIL |
| GERANIOL | 0.3 - 0.6% OF TOTAL OIL |
| SELINENE | |
| OTHER | 15 - 36% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

MAGNUM



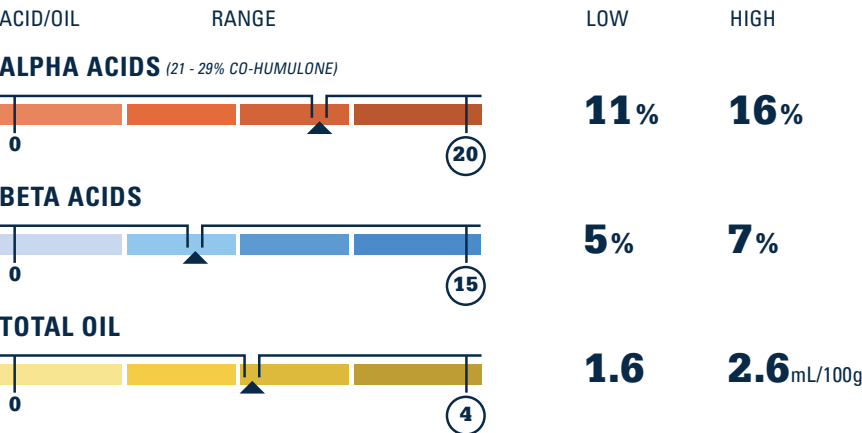
Bred at the Hop Research Center in Hüll in 1980 and released in 1993, Magnum is a daughter of Galena. It is a high alpha variety with some spice and fruit characteristics.

| | |
|----------------|-----------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | APPLE • PEPPER |

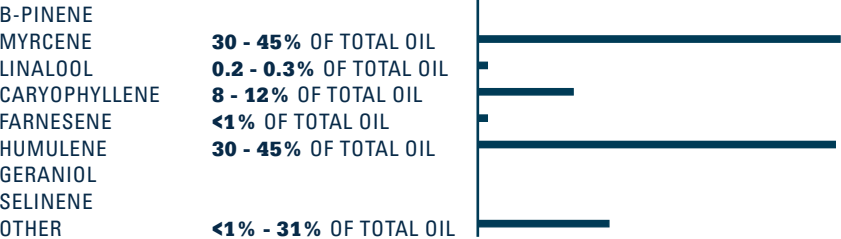
BEER STYLES

IPA • LAGER • PILSNER • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

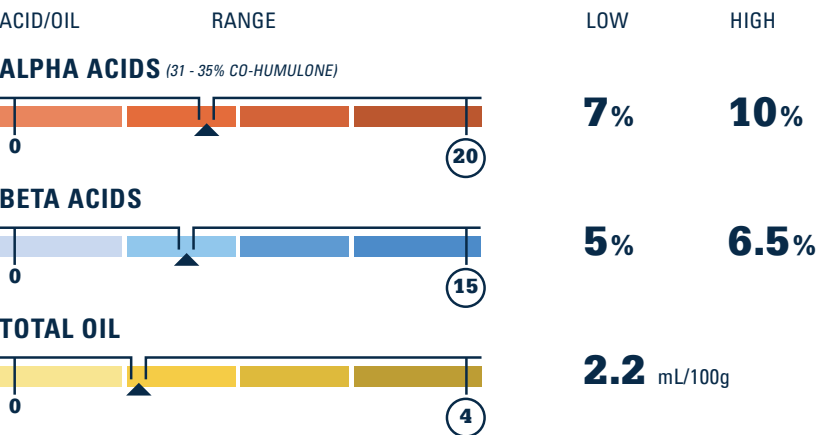
MANDARINA BAVARIA

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

| | | |
|---------------|---------------------------------|---|
| B-PINENE | 71% OF TOTAL OIL |  |
| MYRCENE | 0.1 - 0.6% OF TOTAL OIL |  |
| LINALOOL | 1 - 5% OF TOTAL OIL |  |
| CARYOPHYLLENE | <1% OF TOTAL OIL |  |
| FARNESENE | 5 - 15% OF TOTAL OIL |  |
| HUMULENE | | |
| GERANIOL | | |
| SELINENE | | |
| OTHER | 7.4 - 22.9% OF TOTAL OIL |  |



YAKIMA CHIEF HOPS™

MERKUR

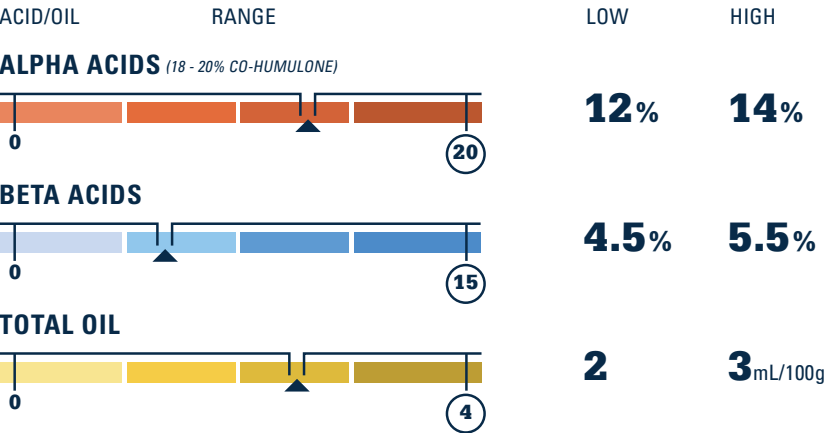


Bred at the Hop Research Institute in Hüll and registered in 2001, Merkur was the first mildew-resistant hop variety from the research center. It is a cross between Magnum and German experimental variety 81/8/13. It is a high alpha variety with low co-humulone oil percentages. In some dual purpose applications,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

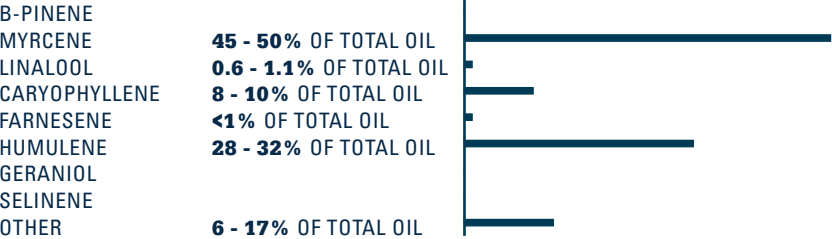
| | |
|----------------|---------------------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | SUGAR • PINEAPPLE • MINT |

BEER STYLES
LAGER • PILSNER • STOUT

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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

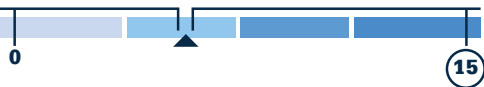
HIGH

ALPHA ACIDS (29 - 35% CO-HUMULONE)



15.5% 18.5%

BETA ACIDS



5% 6.5%

TOTAL OIL



1.5 3mL/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

7 - 40% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

MITTELFRÜH

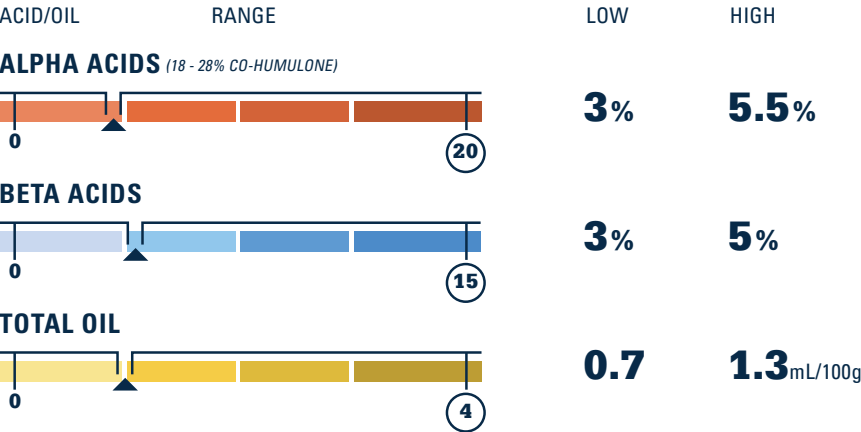


Despite being grown in regions throughout Germany, Mittelfrüh is commonly referred to as “Hallertau Mittelfrüh” as it was once the major Hallertau landrace variety. It is a classic German aroma hop associated with Bavarian-style lager beers, however, due to disease, acreage has been decreasing. Mittelfrüh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

| | |
|----------------|-----------------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | GRASS • TEA • CITRUS |

BEER STYLES
LAGER • PILSNER • WHEAT • CASK-CONDITIONED ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

| | | |
|---------------|-------------------------|--|
| B-PINENE | 15.5% OF TOTAL OIL | |
| MYRCENE | 0.7 - 1.1% OF TOTAL OIL | |
| LINALOOL | 14.6% OF TOTAL OIL | |
| CARYOPHYLLENE | <1% OF TOTAL OIL | |
| FARNESENE | 55.1% OF TOTAL OIL | |
| HUMULENE | | |
| 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

ACID/OIL

RANGE

LOW

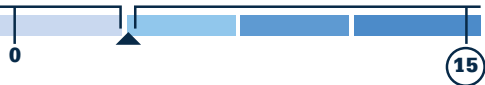
HIGH

ALPHA ACIDS (21 - 25% CO-HUMULONE)



10.5% 14%

BETA ACIDS



3% 4.5%

TOTAL OIL



0.8 3 mL/100g

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

18 - 37% OF TOTAL OIL

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

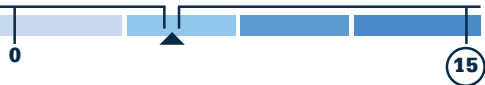
ALPHA ACIDS (29% CO-HUMULONE)



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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (21 - 25% CO-HUMULONE)



4%

6.5%

BETA ACIDS



5%

8%

TOTAL OIL



0.8

2_{mL/100g}

TOTAL OIL BREAKDOWN

B-PINENE

0.4 - 0.8% OF TOTAL OIL

MYRCENE

25 - 35% OF TOTAL OIL

LINALOOL

0.5 - 0.9% OF TOTAL OIL

CARYOPHYLLENE

10 - 16% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

25% OF TOTAL OIL

GERANIOL

0.1 - 0.5% OF TOTAL OIL

SELINENE

21 - 38% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (21 - 23% CO-HUMULONE)



5%

7%

BETA ACIDS



7%

9%

TOTAL OIL



1.5

2.5 mL/100g

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 |



YAKIMA CHIEF HOPS™

NELSON SAUVIN™ BRAND

≡

85-03-06

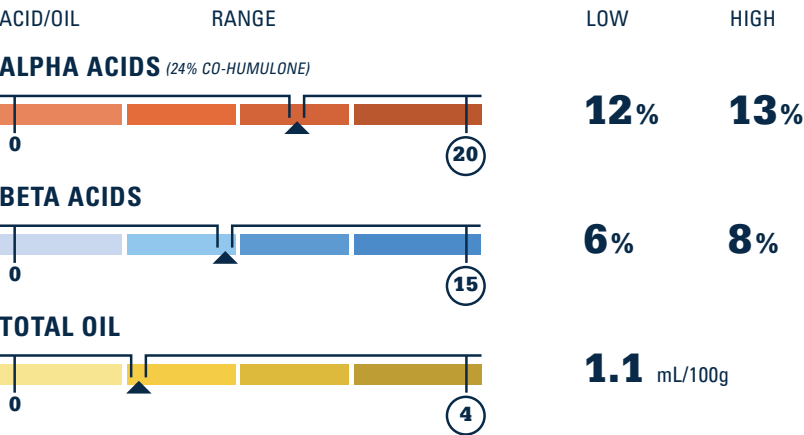
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2000, Nelson Sauvin™ is a triploid variety bred from the New Zealand Smoothcone and a selected New Zealand male. It is known for being one of the most unique hop varieties, displaying strong fruit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

COUNTRY
NEW
ZEALAND

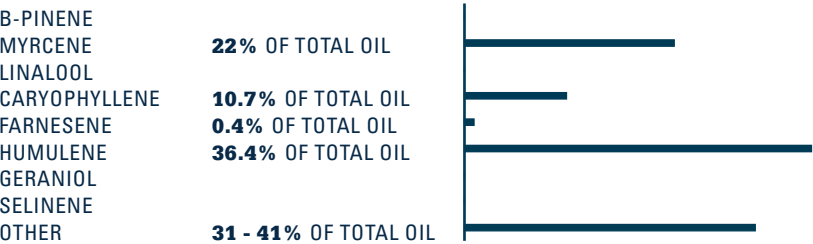
AROMA PROFILE
WHITE WINE • GOOSEBERRY • GRAPE
SAUVIGNON BLANC

BEER STYLES
LAGER • PALE ALE • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (36 - 38% CO-HUMULONE)



10.5% 12.5%

BETA ACIDS



5.5% 6.5%

TOTAL OIL



1.6 2.5 mL/100g

TOTAL OIL BREAKDOWN

| | |
|---------------|-------------------------|
| B-PINENE | 0.6 - 0.9% OF TOTAL OIL |
| MYRCENE | 45 - 55% OF TOTAL OIL |
| LINALOOL | 0.3 - 0.7% OF TOTAL OIL |
| CARYOPHYLLENE | 7 - 11% OF TOTAL OIL |
| FARNESENE | <1% OF TOTAL OIL |
| HUMULENE | 15 - 20% OF TOTAL OIL |
| GERANIOL | 0.2 - 0.5% OF TOTAL OIL |
| SELINENE | |
| OTHER | 11 - 31% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

NORTHDOWN



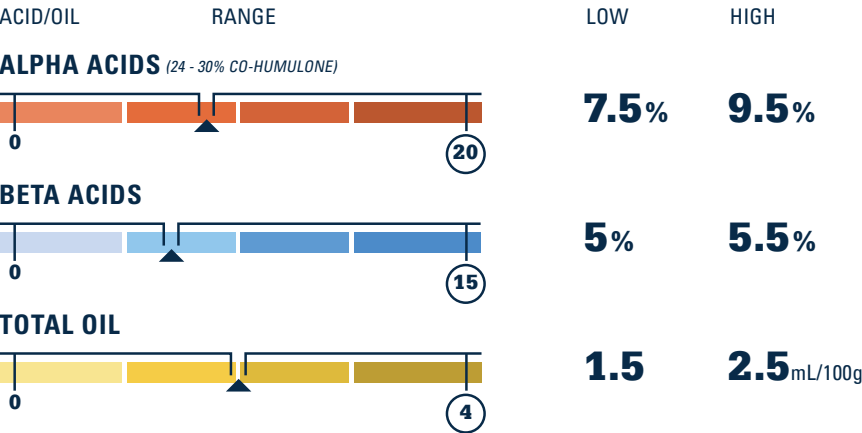
Bred at Wye College in 1970, Northdown is a cross between Northern Brewer and a German male. It is known for its fresh, yet rich flavor.

COUNTRY
**UNITED
KINGDOM**

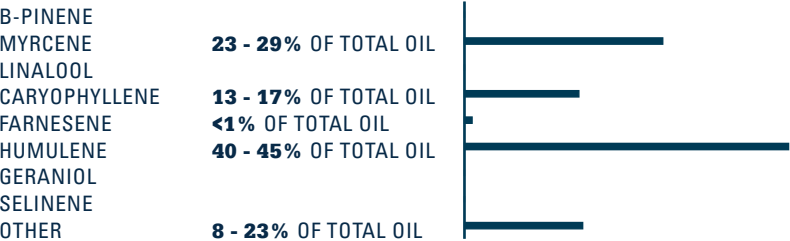
AROMA PROFILE
FLORAL • PINE • CEDAR • BERRY

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

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™


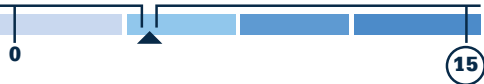

NORTHERN BREWER









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 | AROMA PROFILE |
| UNITED STATES | EVERGREEN • WOOD • MINT |

| |
|-------------------------------|
| BEER STYLES |
| ENGLISH-STYLE BITTER • PORTER |
| ENGLISH-STYLE PALE ALE |

BREWING VALUES

| ACID/OIL | RANGE | LOW | HIGH |
|---|--|------|----------|
| ALPHA ACIDS <small>(30 - 34% CO-HUMULONE)</small> |  | 7% | 10% |
| BETA ACIDS |  | 3.5% | 5.5% |
| TOTAL OIL |  | 1 | 2mL/100g |

| TOTAL OIL BREAKDOWN | | |
|---------------------|-------------------------|---|
| B-PINENE | 0.4 - 0.7% OF TOTAL OIL |  |
| MYRCENE | 35 - 45% OF TOTAL OIL |  |
| LINALOOL | 0.4 - 0.8% OF TOTAL OIL |  |
| CARYOPHYLLENE | 11 - 15% OF TOTAL OIL |  |
| FARNESENE | <1% OF TOTAL OIL |  |
| HUMULENE | 27 - 31% OF TOTAL OIL |  |
| GERANIOL | 0.1 - 0.2% OF TOTAL OIL |  |
| SELINENE | | |
| OTHER | 6 - 25% OF TOTAL OIL |  |



NORTHERN BREWER

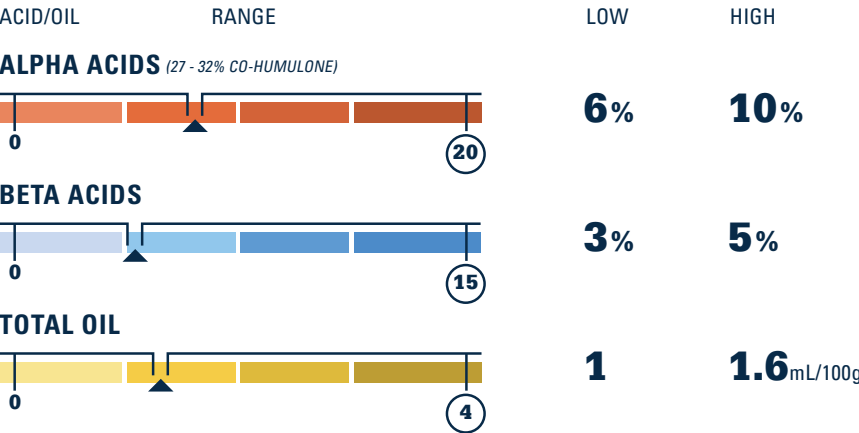
Originally bred in England in 1934, Northern Brewer is a cross between Canterbury Golding and a male seedling of Brewer's Gold. It was originally grown in the North of England, but has become one of the main varieties in the Hallertau region of Germany. Northern Brewer displays pleasant pine and mint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

| | |
|---------|---------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | MINT • PINE • GRASS |







BEER STYLES

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

BREWING VALUES



TOTAL OIL BREAKDOWN

| | | |
|---------------|-------------------------|---|
| B-PINENE | 25 - 45% OF TOTAL OIL |  |
| MYRCENE | 0.3 - 0.8% OF TOTAL OIL |  |
| LINALOOL | 10 - 20% OF TOTAL OIL |  |
| CARYOPHYLLENE | <1% OF TOTAL OIL |  |
| FARNESENE | 35 - 50% OF TOTAL OIL |  |
| HUMULENE | | |
| 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.

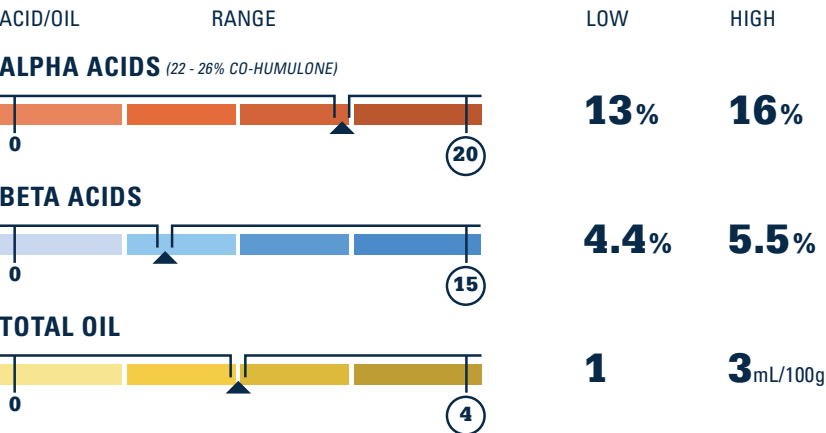
COUNTRY
UNITED STATES

AROMA PROFILE
GREEN • WOOD • GINGER

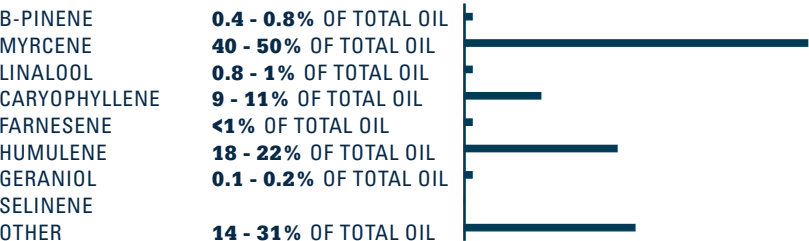
BEER STYLES
LAGER • PILSNER • PALE ALE • ESB



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

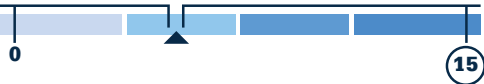
HIGH

ALPHA ACIDS



11.5% **13.5%**

BETA ACIDS



5% **5.5%**

TOTAL OIL



1 **2**_{mL/100g}

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 |



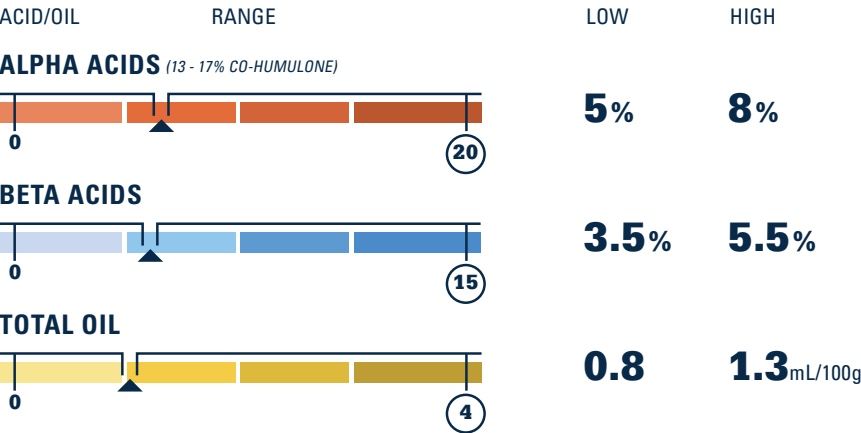
YAKIMA CHIEF HOPS™

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 | AROMA PROFILE |
|----------------|--|
| GERMANY | SWEET SPICE • PEPPER • CLEAN CITRUS • ANISE |

BEER STYLES
BELGIAN-STYLE ALE • WHEAT • SUMMER ALE

BREWING VALUES



TOTAL OIL BREAKDOWN

| | | |
|---------------|------------------------|---|
| B-PINENE | 20 - 45% OF TOTAL OIL |  |
| MYRCENE | 1 - 1.5% OF TOTAL OIL |  |
| LINALOOL | 8 - 15% OF TOTAL OIL |  |
| CARYOPHYLLENE | <1% OF TOTAL OIL |  |
| FARNESENE | 30 - 50% OF TOTAL OIL |  |
| HUMULENE | | |
| GERANIOL | | |
| SELINENE | | |
| OTHER | <1% - 40% OF TOTAL OIL |  |



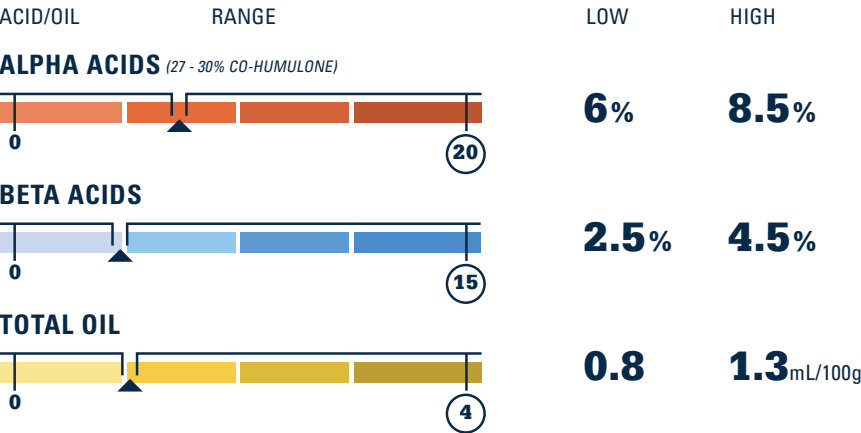
Orion is a cross between German Perle and 70/10/15M; it is a half-sister to Challenger. Acreage and availability are limited.

| | |
|----------------|---------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | SPICY |

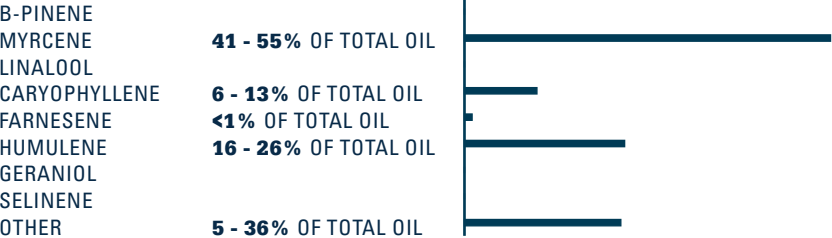
BEER STYLES

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

BREWING VALUES



TOTAL OIL BREAKDOWN



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

SSAAZ • FUGGLE • TETTNANG



BREWING VALUES

ACID/OIL

RANGE

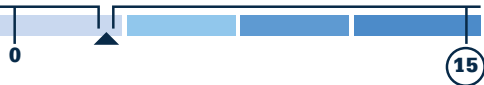
PERCENTAGE

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 |
| CARYOPHYLLENE | 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



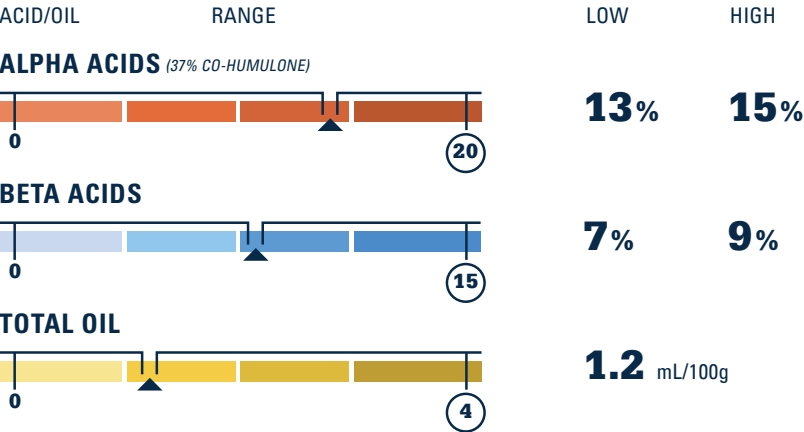
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1987, Pacific Gem is a triploid alpha variety from New Zealand Smoothcone crossed with Californian Late Cluster and Fuggle. It is typically used as a first hop addition for bittering purposes, but 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 | 11% OF TOTAL OIL |
| CARYOPHYLLENE | 0.3% OF TOTAL OIL |
| FARNESENE | 29.9% OF TOTAL OIL |
| HUMULENE | |
| GERANIOL | |
| SELINENE | |
| OTHER | 26% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

PACIFIC JADE™ BRAND

HORT1524

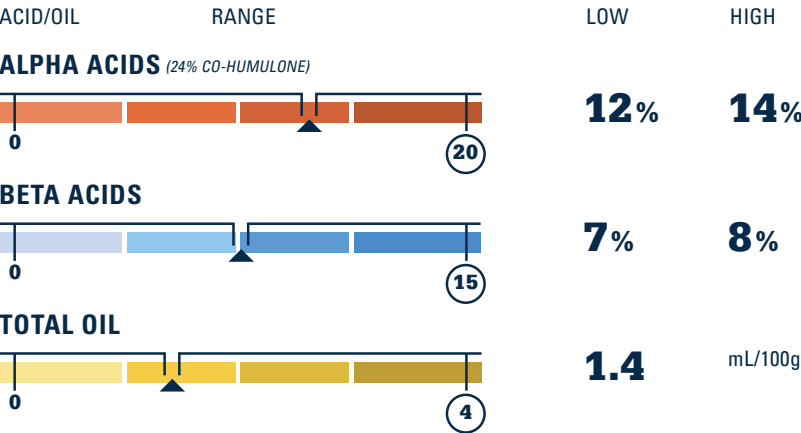
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2004, Pacific Jade™ is a cross of New Zealand First Choice (a relative of the Late Cluster) and a Saaz male. It is suited for use as a bittering hop but also delivers bold citrus and spice aroma characteristics.

COUNTRY
**NEW
ZEALAND**

AROMA PROFILE
FRESH CITRUS • BLACK PEPPER

BEER STYLES
ALE • LAGER • PORTER

BREWING VALUES



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

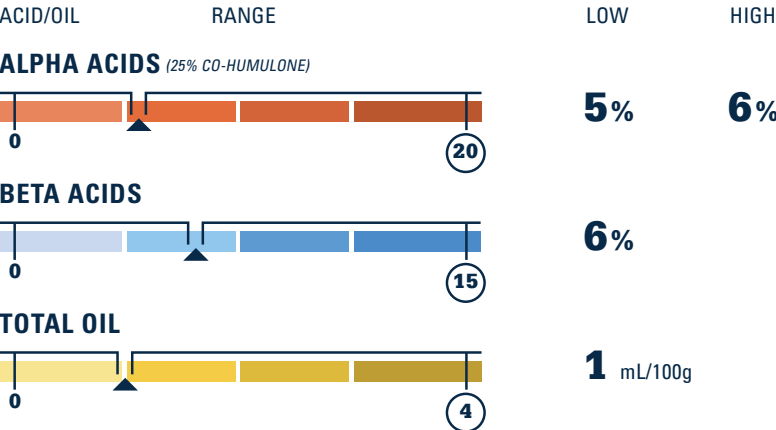
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1993, Pacifica™ was bred through open pollination of Hallertau Mittelfrüh. It displays classic Hallertau citrus and floral aroma characters but brings a blend of new and old-world taste descriptors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

COUNTRY
**NEW
ZEALAND**

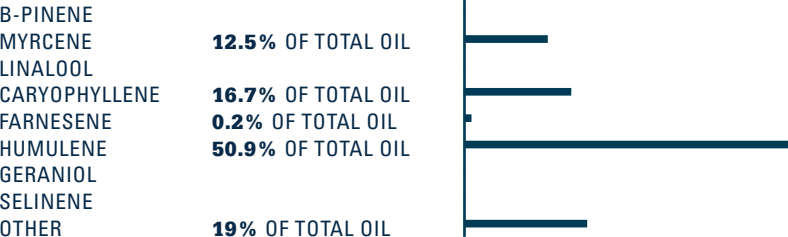
AROMA PROFILE
ORANGE ZEST • MARMALADE

BEER STYLES
LAGER • PALE ALE • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (26 - 28% CO-HUMULONE)



17%

20%

BETA ACIDS



4.6%

6%

TOTAL OIL



1

2.5 mL/100g

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

0.1 - 0.2% OF TOTAL OIL

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

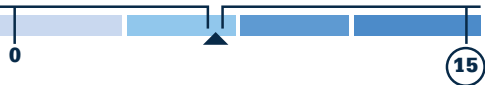
ALPHA ACIDS (26 - 28% CO-HUMULONE)



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

ACID/OIL

RANGE

LOW

HIGH

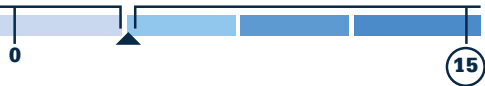
ALPHA ACIDS (27 - 30% CO-HUMULONE)



13%

16%

BETA ACIDS



3.5%

4.3%

TOTAL OIL



2.1

2.7 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

46 - 55% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

11 - 13% OF TOTAL OIL

FARNESENE

0 - 1% OF TOTAL OIL

HUMULENE

12 - 15% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

16 - 31% OF TOTAL OIL



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

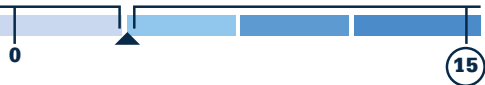
ALPHA ACIDS (28 - 31% CO-HUMULONE)



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

2 - 28% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

PERLE

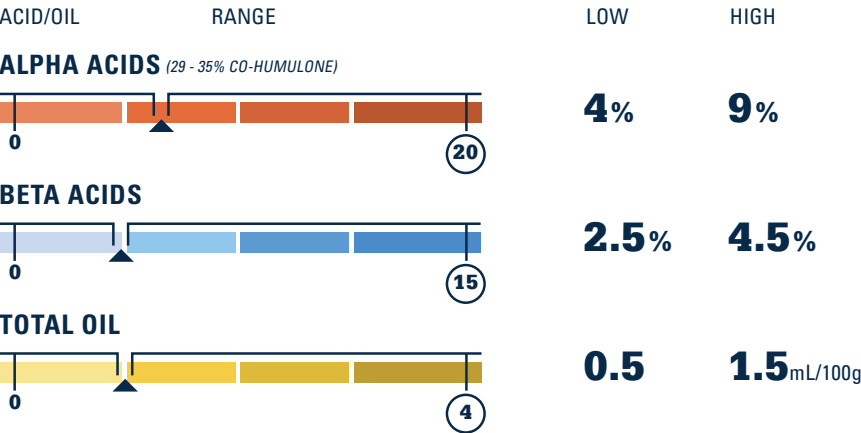


Bred at the Hop Research Institute in Hüll and released in 1978, Perle is a descendant of Northern Brewer. It demonstrates good tolerance to most diseases, being grown in Germany and the United States.







| | |
|----------------|----------------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | MINT • TEA • PEPPER |

BEER STYLES
WHEAT • LAGER • KÖLSCH • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN

| | | |
|---------------|-------------------------|---|
| B-PINENE | 20 - 35% OF TOTAL OIL |  |
| MYRCENE | 0.2 - 0.6% OF TOTAL OIL |  |
| LINALOOL | 10 - 20% OF TOTAL OIL |  |
| CARYOPHYLLENE | <1% OF TOTAL OIL |  |
| FARNESENE | 35 - 55% OF TOTAL OIL |  |
| HUMULENE | | |
| GERANIOL | | |
| SELINENE | | |
| OTHER | <1% - 34% OF TOTAL OIL |  |



YAKIMA CHIEF HOPS™

PHOENIX



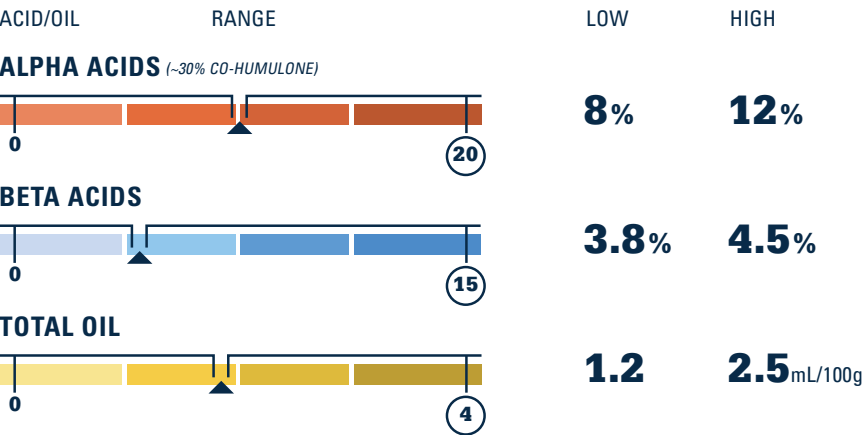
Bred at Wye College and released in 1996, Phoenix is a seedling of Yeoman. In brewing trials, Phoenix has produced excellent results in both bittering and flavor applications.

COUNTRY
**UNITED
KINGDOM**

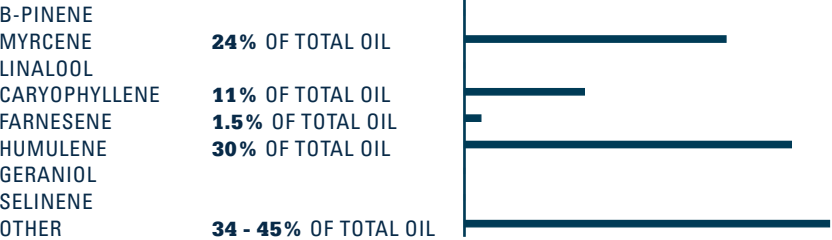
AROMA PROFILE
SPICY • FLORAL • CHOCOLATE

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

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

PILGRIM



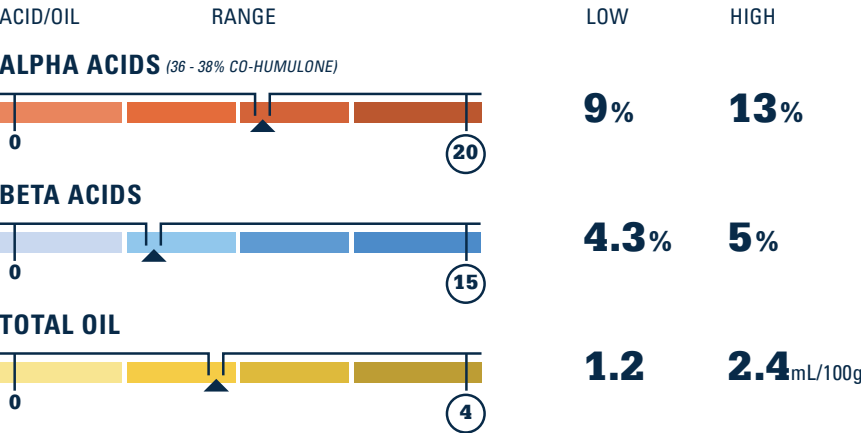
Bred at Wye College in the late 1990s and released in 2001, Pilgrim is half-sister to First Gold and sister to Herald. It is often compared to Target. Pilgrim’s selinene content helps enhance brewing performance and produce a “hoppier” aroma.

COUNTRY
**UNITED
KINGDOM**

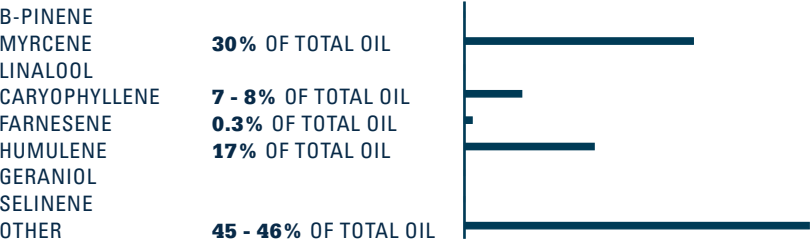
AROMA PROFILE
LEMON • GRAPEFRUIT • PEAR • BERRY

BEER STYLES
ALE • WHEAT • STOUT • HELLES • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

PILOT



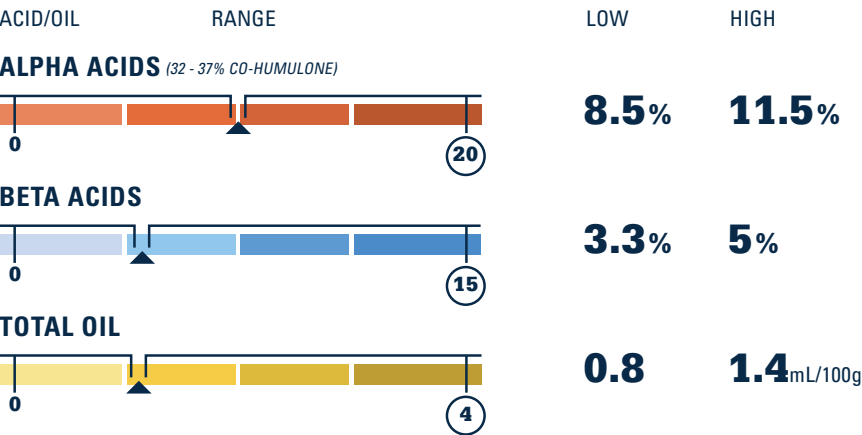
Bred at Wye College and released in 2001, Pilot is a result of open pollination of Pioneer. It is known for its distinct marmalade flavor and complete aroma profile being distinctively different than other UK varieties.

COUNTRY
**UNITED
KINGDOM**

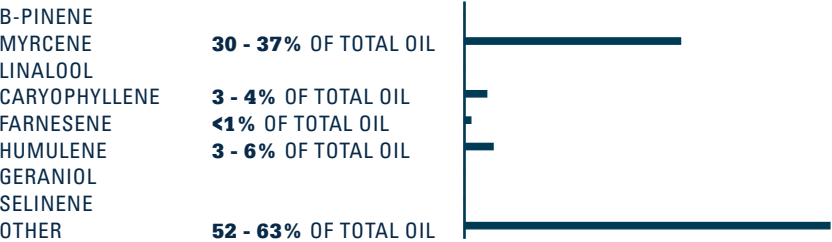
AROMA PROFILE
MARMALADE • LEMON • SPICE

BEER STYLES
AMERICAN-STYLE ALE • ENGLISH-STYLE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

PIONEER



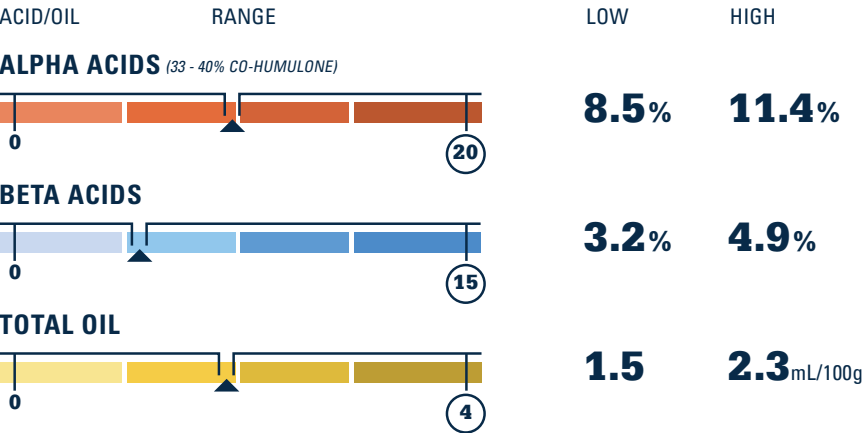
Bred at Wye College and released in 1996, Pioneer is a sister to Herald. It displays a distinctly “hoppy” aroma with crisp and refreshing bittering characteristics.

COUNTRY
**UNITED
KINGDOM**

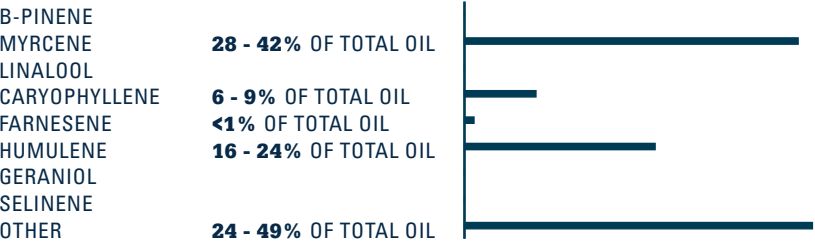
AROMA PROFILE
LEMON • GRAPEFRUIT • CEDAR • HERBAL

BEER STYLES
ENGLISH-STYLE BITTER • ENGLISH-STYLE ALE • RED ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

POLARIS



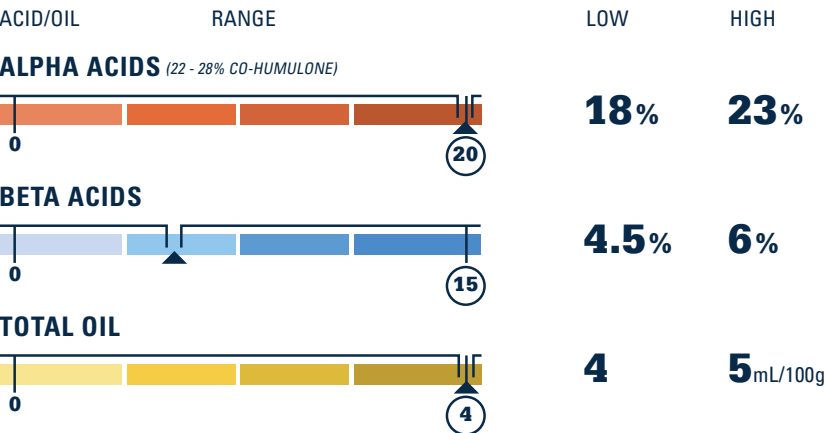
Bred at the Hop Research Institute in Hüll and released in 2012, Polaris was commercialized as a new, German variety in response to growing demand from the craft beer industry for distinct flavor profiles. It features extremely high alpha content along with intense mint flavors.

COUNTRY
GERMANY

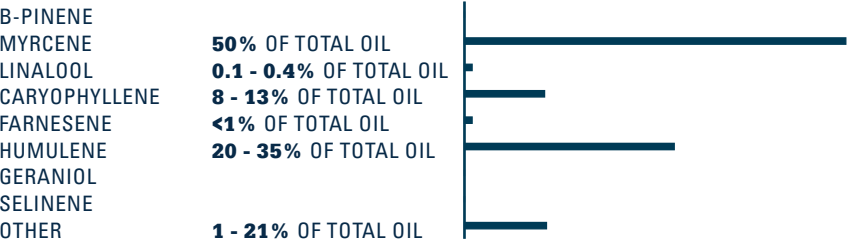
AROMA PROFILE
MINT • PINEAPPLE • MENTHOL

BEER STYLES
STOUT • IPA • DOUBLE IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



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



YAKIMA CHIEF HOPS™

PRIDE OF RINGWOOD

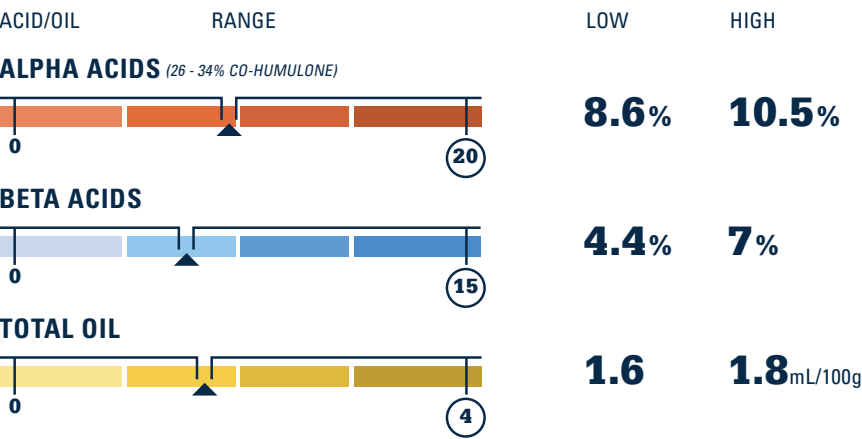
Bred in 1953 and commercially grown since the 1960s. One of Australia’s most known and utilized hop varieties. Predominantly used for early kettle additions.

| | |
|------------------|--------------------|
| COUNTRY | AROMA PROFILE |
| AUSTRALIA | CEDAR • OAK |

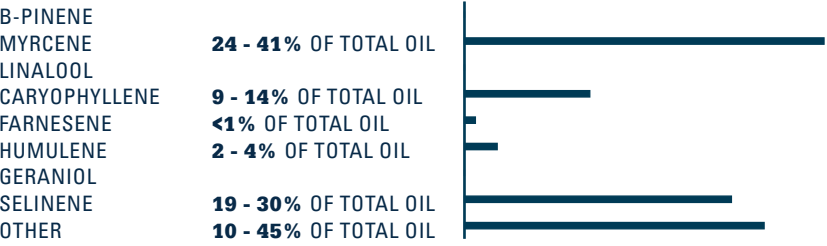
BEER STYLES

LAGER • PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



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

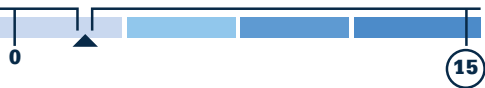
ALPHA ACIDS (25 - 30% CO-HUMULONE)



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

9 - 23% OF TOTAL OIL

OTHER



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

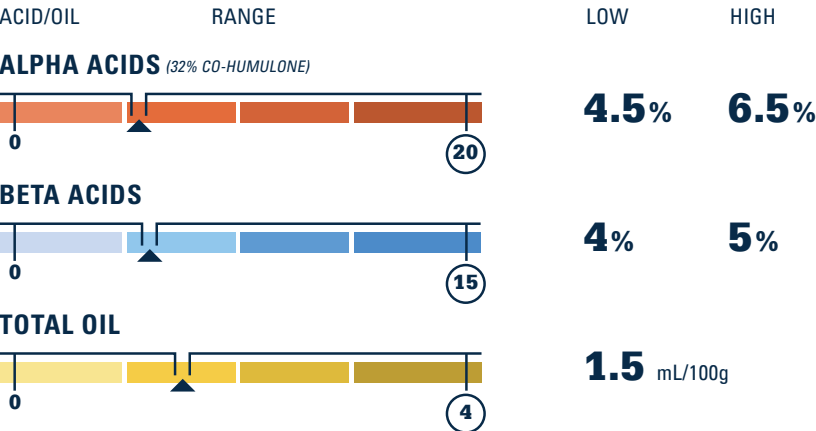
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1996, Riwaka™ is a triploid aroma variety bred from “Old Line” Saaz and New Zealand breeding selections. It is a quintessential New Zealand variety. Riwaka™ is a bold, fruity hop that is best suited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

COUNTRY
**NEW
ZEALAND**

AROMA PROFILE
GRAPEFRUIT • CITRUS

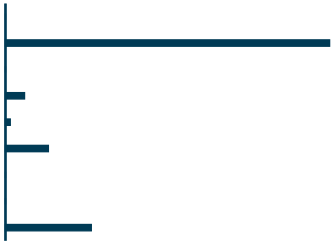
BEER STYLES
IPA • DOUBLE IPA • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN

| | |
|---------------|------------------|
| B-PINENE | 68% OF TOTAL OIL |
| MYRCENE | |
| LINALOOL | 4% OF TOTAL OIL |
| CARYOPHYLLENE | <1% OF TOTAL OIL |
| FARNESENE | 9% OF TOTAL OIL |
| HUMULENE | |
| GERANIOL | |
| SELINENE | 18% OF TOTAL OIL |
| OTHER | |



YAKIMA CHIEF HOPS™

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

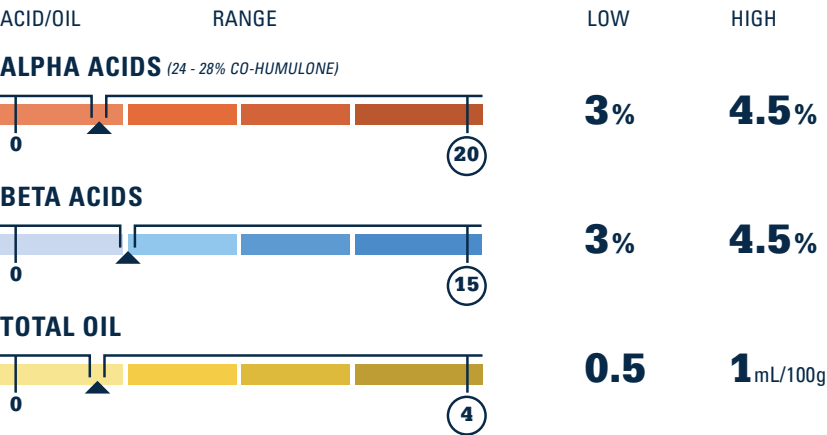
COUNTRY
UNITED STATES

AROMA PROFILE
EARTHY • SPICY

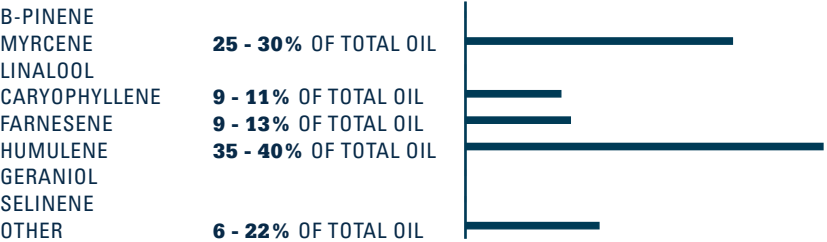
BEER STYLES
**LAGER • PILSNER • BELGIAN-STYLE ALE
WHEAT**



BREWING VALUES



TOTAL OIL BREAKDOWN



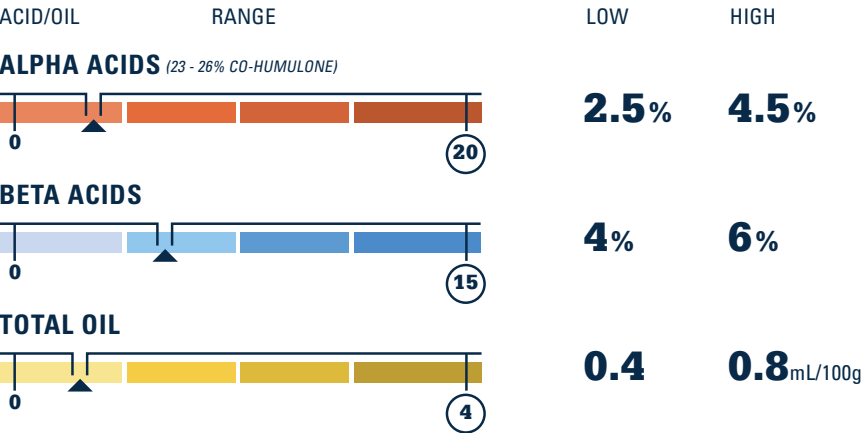
A Czech Republic landrace variety, Saaz is the most classic “noble” aroma hop with longstanding and strong traditions. It is associated with and defines Czech-style pilsners.

COUNTRY
**CZECH
REPUBLIC**

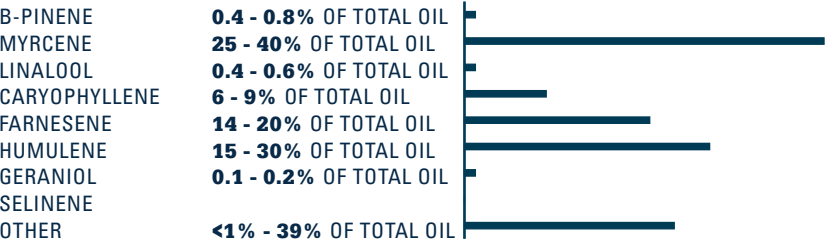
AROMA PROFILE
PLEASANT • MILD

BEER STYLES
PILSNER • LAGER • BELGIAN-STYLE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



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

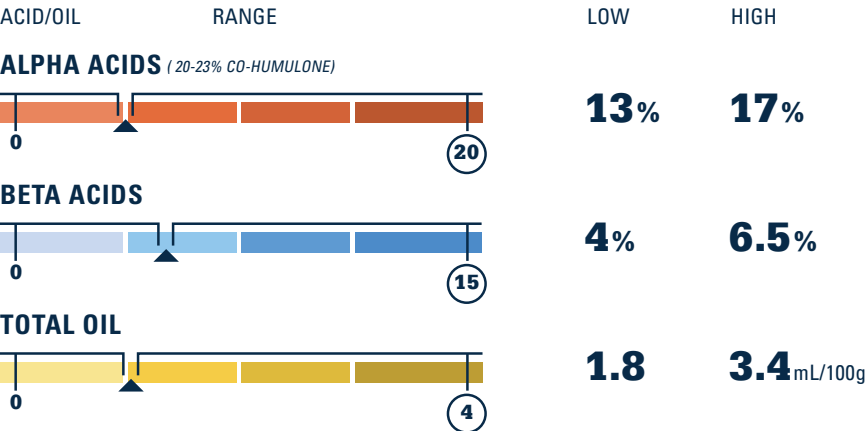
AROMA PROFILE
**CITRUS • STONE FRUIT
COCONUT • TROPICAL FRUIT
HERBAL**



BEER STYLES

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

BREWING VALUES



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 Tettnang, 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

16 - 44% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

SAPHIR

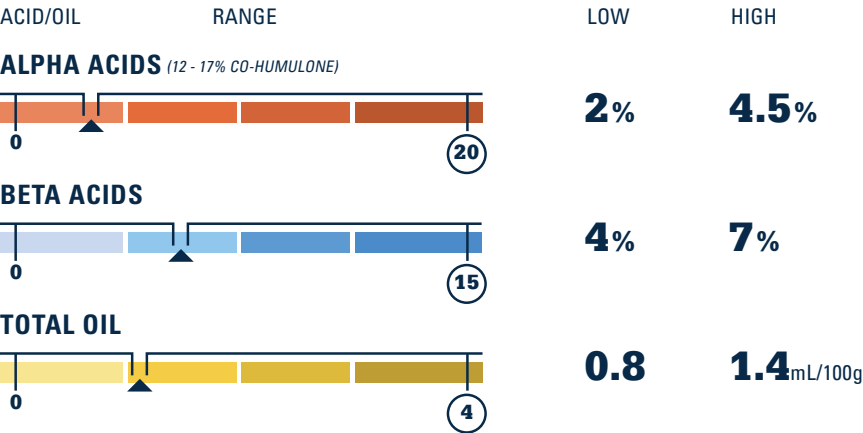


Bred at the Hop Research Institute in Hüll and released in 2002, Saphir is an aroma variety with a distinct hoppy tang.







| | |
|----------------|-----------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | SPICY • FLORAL |

BEER STYLES
GERMAN-STYLE LAGER • BELGIAN-STYLE ALE • PILSNER WHEAT

BREWING VALUES



TOTAL OIL BREAKDOWN

| | | |
|---------------|-------------------------|---|
| B-PINENE | 25 - 40% OF TOTAL OIL |  |
| MYRCENE | 0.8 - 1.3% OF TOTAL OIL |  |
| LINALOOL | 9 - 14% OF TOTAL OIL |  |
| CARYOPHYLLENE | <1% OF TOTAL OIL |  |
| FARNESENE | 20 - 30% OF TOTAL OIL |  |
| HUMULENE | 14 - 44% OF TOTAL OIL |  |
| GERANIOL | | |
| SELINENE | | |
| OTHER | | |



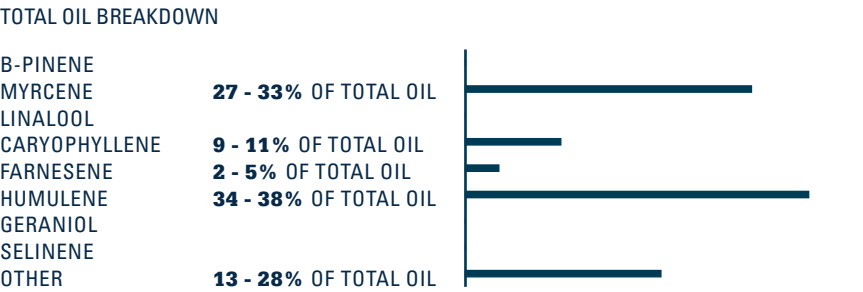
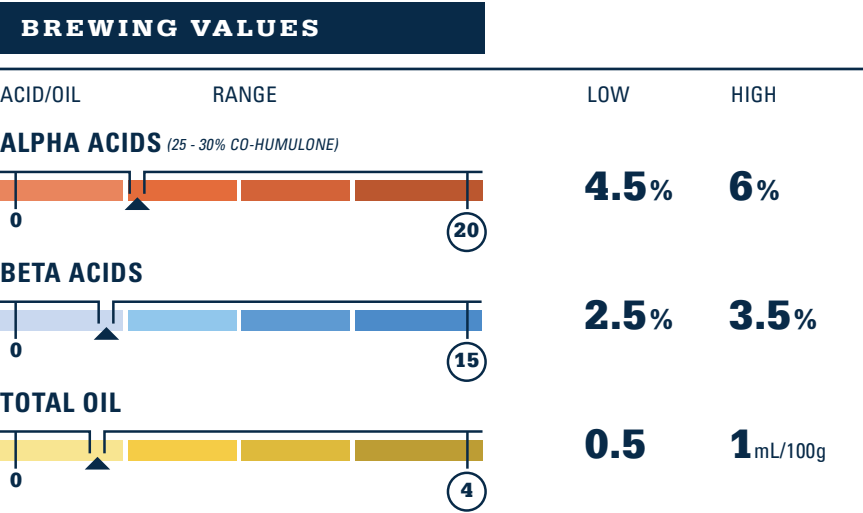
YAKIMA CHIEF HOPS™

SAVINJSKI GOLDING ≡

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

| | |
|-----------------|---------------|
| COUNTRY | AROMA PROFILE |
| SLOVENIA | NOBLE |

BEER STYLES
ALE • LAGER • STOUT • BITTER • BARLEY WINE



SELECT



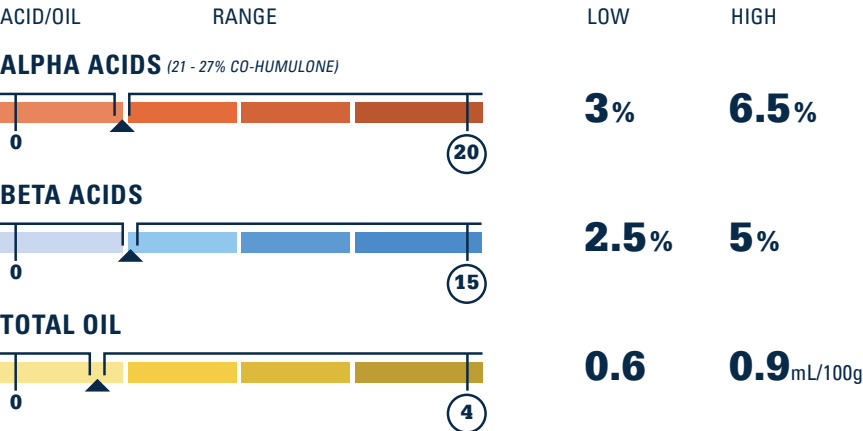
Bred at the Hop Research Center in Hüll and released in 1993, Select is often referred to as “Spalter Select.” It was bred to be like the Spalt, Tettnang, and Saaz groups.

| | |
|----------------|----------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | SPICY • GRASS |

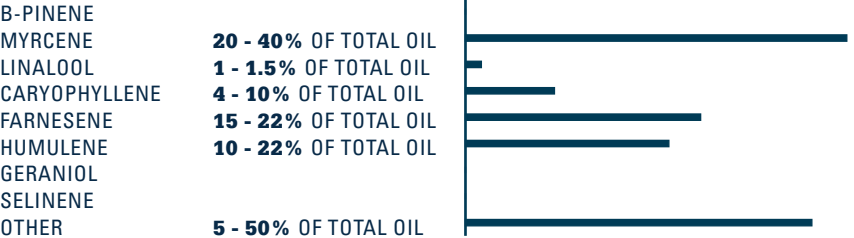
BEER STYLES

LAGER • GERMAN-STYLE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



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

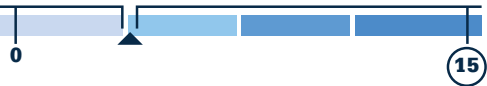
HIGH

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

12 - 34% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

SLÁDEK



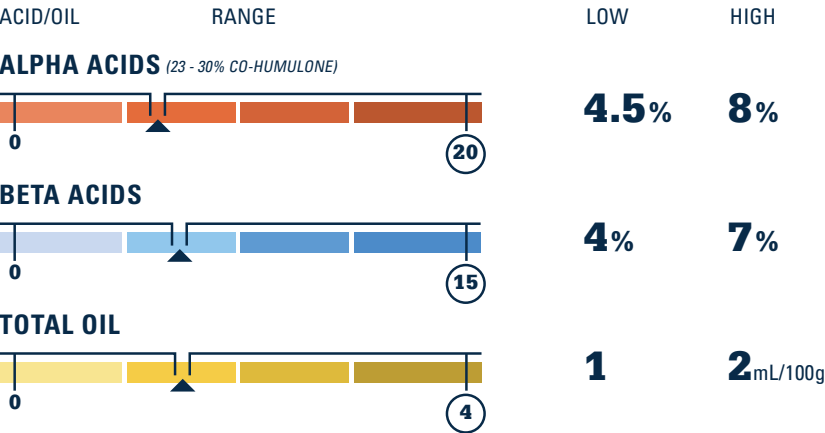
A hybrid aroma variety of Saaz-type and Northern Brewer, Sládek displays noble characteristics with a fruity twist. Its name is derived from the Czech word meaning “beer brewer.” Sládek is noted to be a good complement to Saaz in late-hopping applications.

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

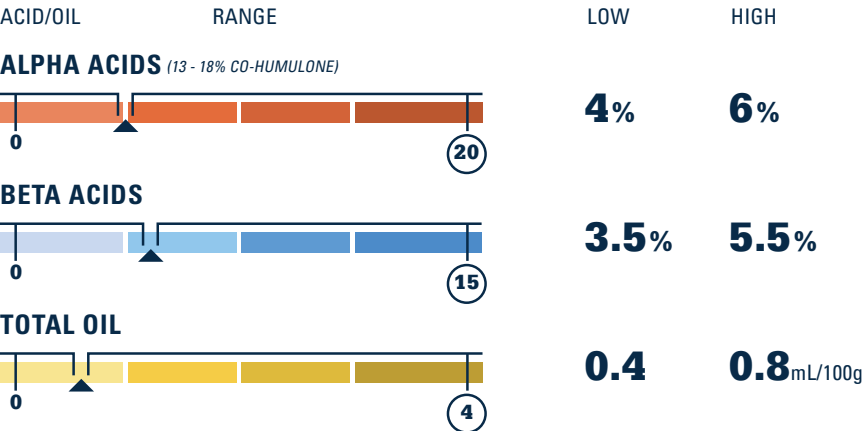


Bred at the Hop Research Institute in Hüll, Smaragd is a fine aroma variety with many noble characteristics. It was formerly known as Emerald.

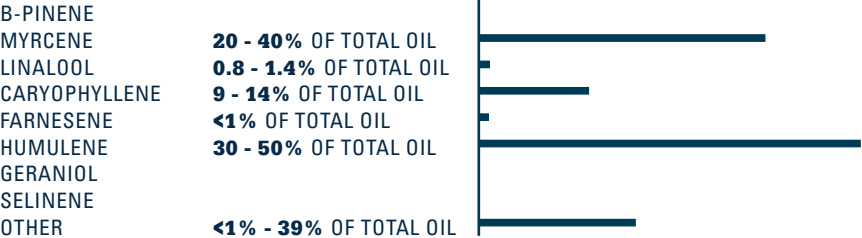
| | |
|----------------|--------------------------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | ANISE • TOBACCO • CLOVE |

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.

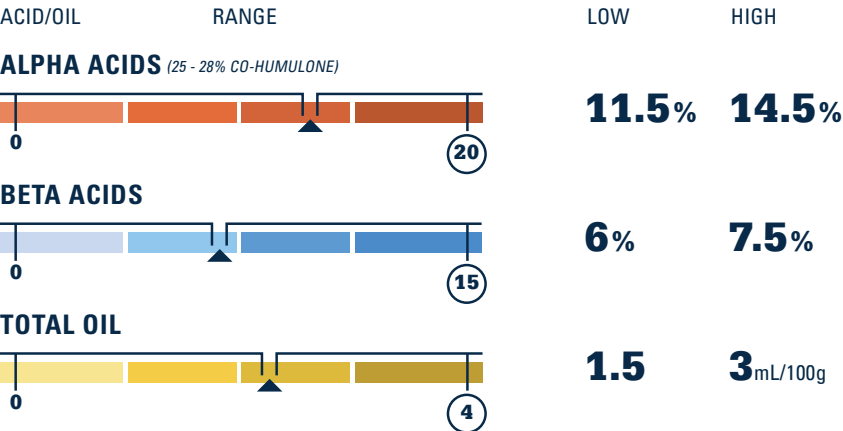
COUNTRY
UNITED STATES

AROMA PROFILE
LEMON • LIME • DILL

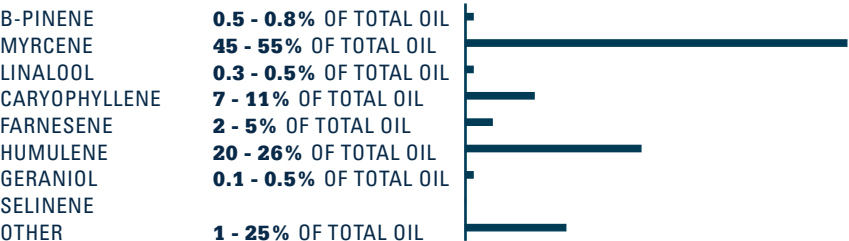
BEER STYLES
**IPA • AMERICAN PALE ALE • LAGER
BELGIAN-STYLE ALE • SAISON**



BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SOUTHERN CROSS



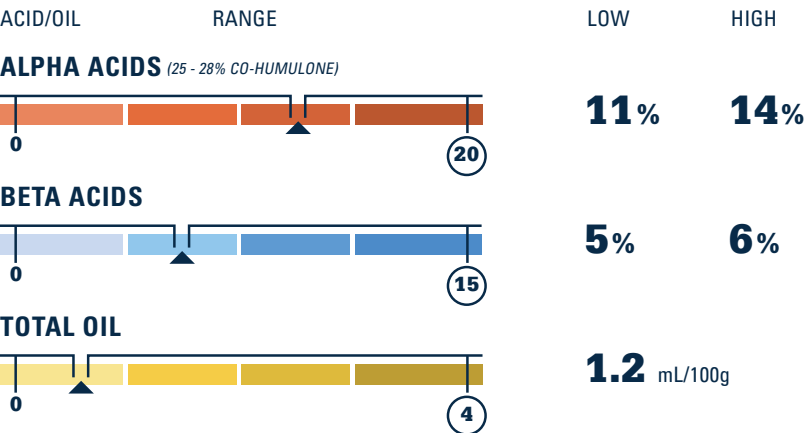
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1994, Southern Cross is a triploid cross between New Zealand Smoothcone and a 1950's research variety bred from a crossing of Californian and English Fuggle. It has excellent essential oils and low 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 | 6.7% OF TOTAL OIL |
| CARYOPHYLLENE | 7.3% OF TOTAL OIL |
| FARNESENE | 20.8% OF TOTAL OIL |
| HUMULENE | |
| GERANIOL | |
| SELINENE | |
| OTHER | 33% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

SOVEREIGN



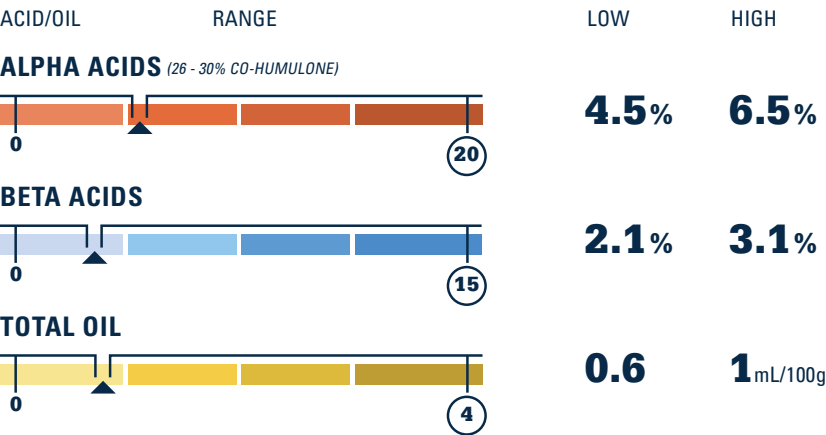
Bred at Wye College in 1995 and released in 2004, Sovereign is a dwarf variety bred by open pollination. It is a granddaughter of Pioneer. Sovereign is often used in conjunction with Goldings in English-style beers.

COUNTRY
**UNITED
KINGDOM**

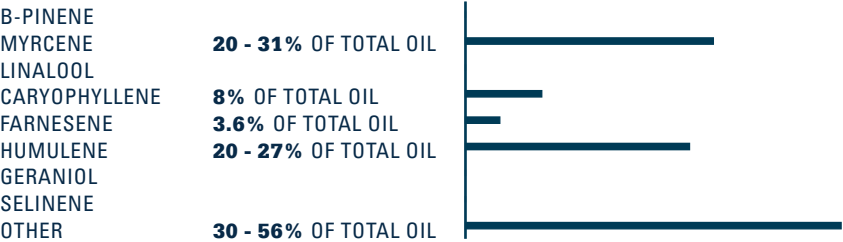
AROMA PROFILE
FLORAL • GRASS • HERBAL • MINT • PEAR

BEER STYLES
ENGLISH-STYLE BITTER • PALE ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SPALT



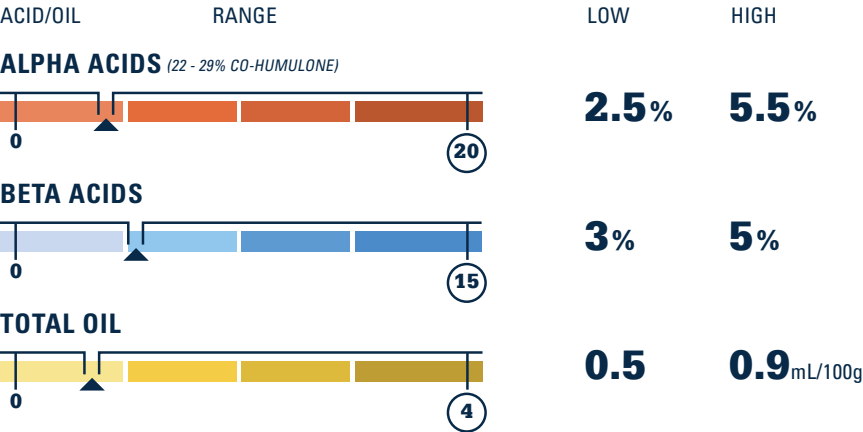
A landrace variety originating from the Spalt region in Southern Germany, Spalt (or Spalter) is an aroma variety with characteristics similar to German Tettnang. It belongs to the Saaz group and displays fine, noble characteristics.

| | |
|----------------|---------------|
| COUNTRY | AROMA PROFILE |
| GERMANY | NOBLE |

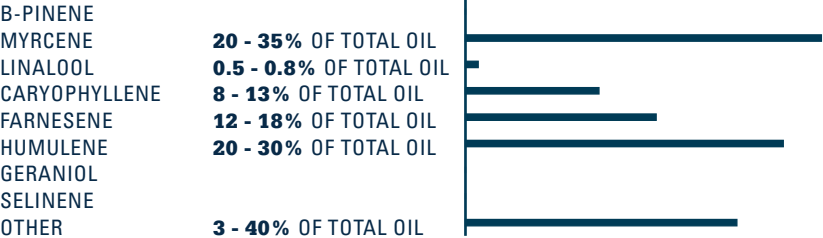
BEER STYLES

LAGER • ALTBIER • BOCK • HELLES • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

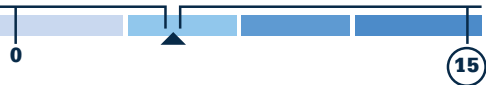
ALPHA ACIDS (22 - 27% CO-HUMULONE)



5.5%

8.5%

BETA ACIDS



4.5%

6%

TOTAL OIL



1

2_{mL/100g}

TOTAL OIL BREAKDOWN

B-PINENE
MYRCENE
LINALOOL
CARYOPHYLLENE
FARNESENE
HUMULENE
GERANIOL
SELINENE
OTHER

0.3 - 0.6% OF TOTAL OIL
35 - 45% OF TOTAL OIL
0.6 - 0.9% OF TOTAL OIL
5 - 8% OF TOTAL OIL
15 - 19% OF TOTAL OIL
16 - 18% OF TOTAL OIL
0.2 - 0.4% OF TOTAL OIL
8 - 28% OF TOTAL OIL



YAKIMA CHIEF HOPS™

STICKLEBRACKT



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
MYRCENE
LINALOOL
CARYOPHYLLENE
FARNESENE
HUMULENE
GERANIOL
SELINENE
OTHER

15% OF TOTAL OIL
12.6% OF TOTAL OIL
6.7% OF TOTAL OIL
25.5% OF TOTAL OIL
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.

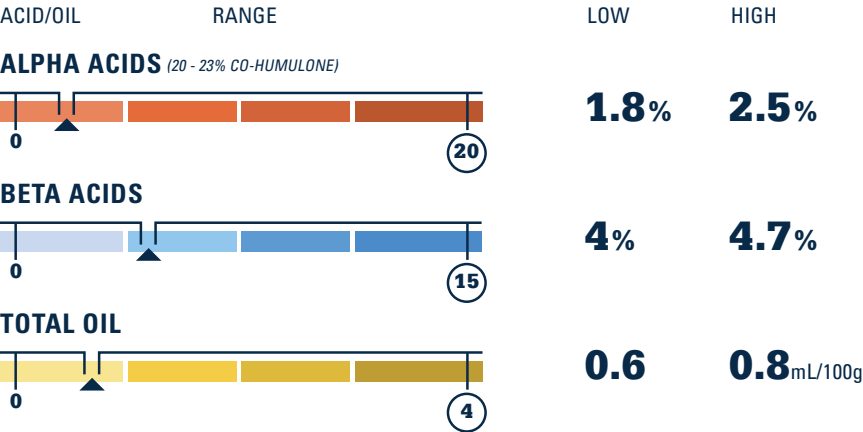
COUNTRY
FRANCE

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

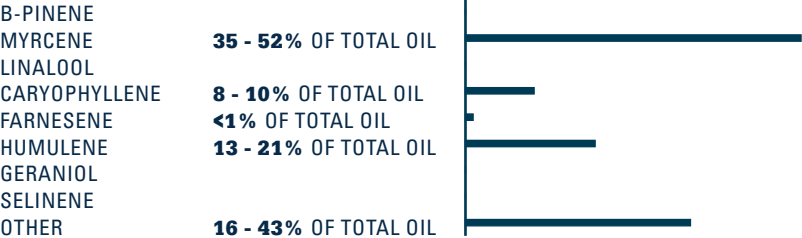
BEER STYLES

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

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SUMMER™ BRAND



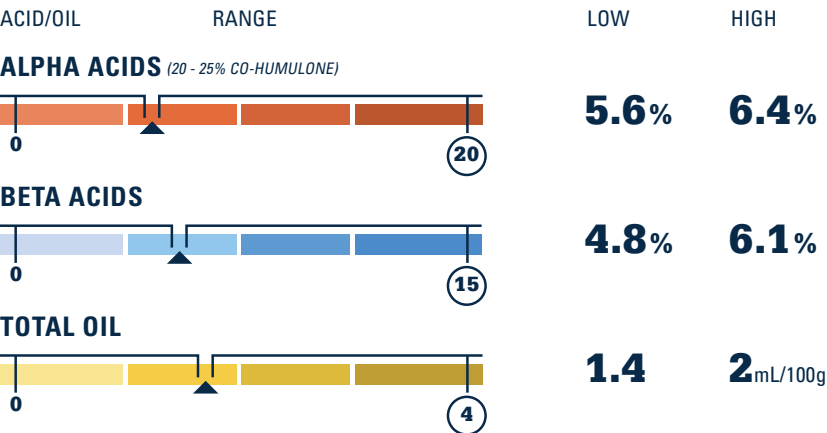
Bred in 1997 at Tasmanian Bushy Park Breeding Garden, Summer™ is the result of open pollination of a tetraploid Czech Saaz. It features balanced citrus and stone fruit flavors, but showcases distinct apricot and melon characteristics in dry hopping applications.

| | |
|------------------|------------------------|
| COUNTRY | AROMA PROFILE |
| AUSTRALIA | APRICOT • MELON |

BEER STYLES

ALE • LAGER • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN

| | |
|---------------|-------------------------|
| B-PINENE | 29 - 38% OF TOTAL OIL |
| MYRCENE | 0.2 - 0.6% OF TOTAL OIL |
| LINALOOL | 8 - 11% OF TOTAL OIL |
| CARYOPHYLLENE | <1% OF TOTAL OIL |
| FARNESENE | 28 - 50% OF TOTAL OIL |
| HUMULENE | 1 - 2% OF TOTAL OIL |
| GERANIOL | <1% - 33% OF TOTAL OIL |
| SELINENE | |
| OTHER | |



YAKIMA CHIEF HOPS™

SUMMIT™ BRAND



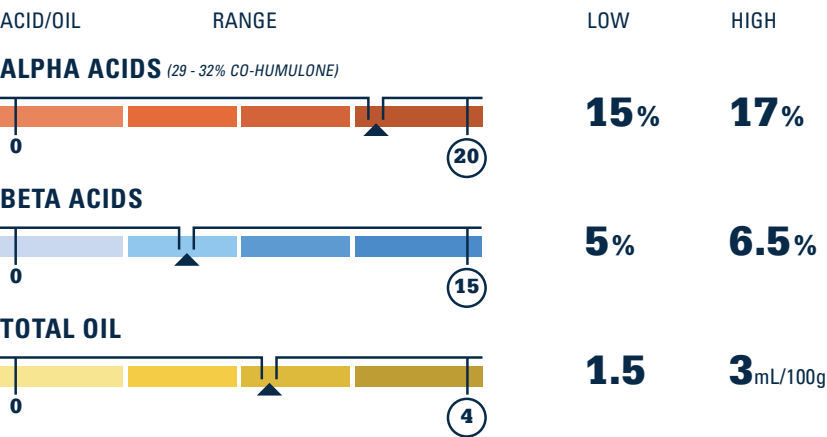
Bred by the American Dwarf Hop Association and released in 2003, Summit™ is a cross between Lexus and an unspecified male derived from numerous hops including Zeus, Nugget and male USDA varieties. It is the first dwarf hop to be bred for production in the United States. Summit™ is mainly used as a bittering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

| | |
|----------------------|--|
| COUNTRY | AROMA PROFILE |
| UNITED STATES | PEPPER • INCENSE • ANISE ORANGE • PINK GRAPEFRUIT TANGERINE |

BEER STYLES
IPA • DOUBLE IPA • PALE ALE • WHEAT



BREWING VALUES



TOTAL OIL BREAKDOWN

| | | |
|---------------|-------------------------|--|
| B-PINENE | 0.3 - 0.6% OF TOTAL OIL | |
| MYRCENE | 30 - 40% OF TOTAL OIL | |
| LINALOOL | 0.2 - 0.4% OF TOTAL OIL | |
| CARYOPHYLLENE | 12 - 16% OF TOTAL OIL | |
| FARNESENE | <1% OF TOTAL OIL | |
| HUMULENE | 18 - 22% OF TOTAL OIL | |
| GERANIOL | 0.1 - 0.6% OF TOTAL OIL | |
| SELINENE | | |
| OTHER | 19 - 38% OF TOTAL OIL | |



YAKIMA CHIEF HOPS™

SUPER PRIDE

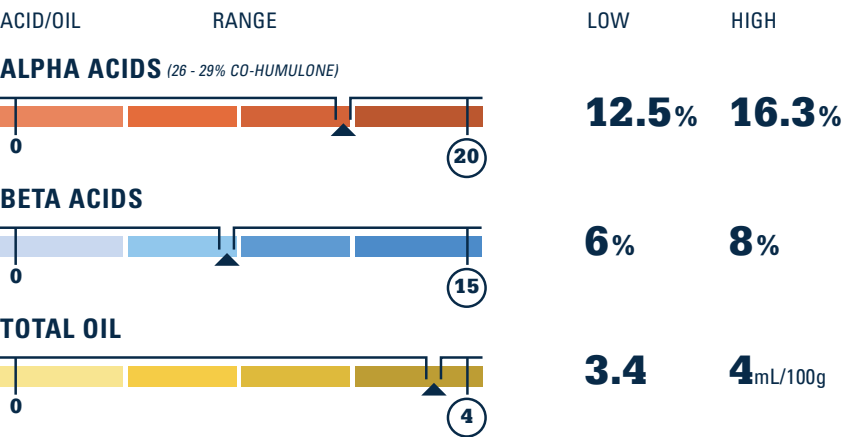


Bred in 1987 at the Rostrevor Breeding Garden in Victoria and released in 1995, Super Pride is a daughter of Pride of Ringwood. It is predominantly used as a bittering hop, but offers a subtle resin and fruit characteristic as well.

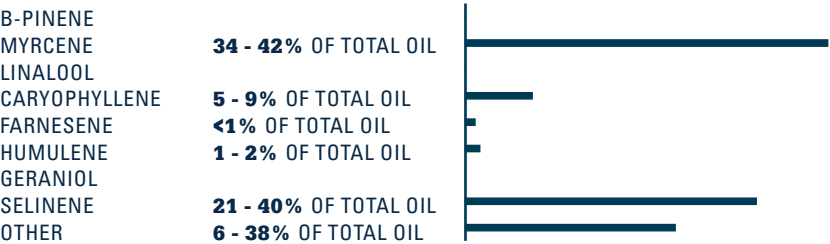
| | |
|-----------|---------------|
| COUNTRY | AROMA PROFILE |
| AUSTRALIA | RESIN • FRUIT |

BEER STYLES
BOCK • PALE ALE • LAGER • IPA

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SUSSEX



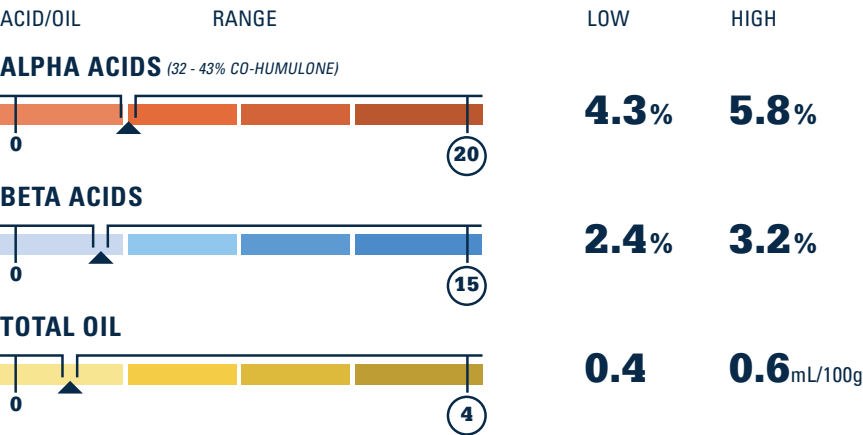
Discovered in 2005 at Gate Court, Northiam in East Sussex, Sussex is a “chance find” variety. It is likely to have resulted from open pollination of a wild hop.

COUNTRY
**UNITED
KINGDOM**

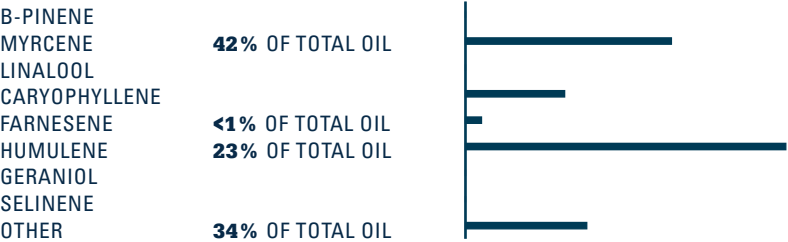
AROMA PROFILE
EARTHY • GRASS • MINT • CITRUS • VANILLA

BEER STYLES
ALE

BREWING VALUES



TOTAL OIL BREAKDOWN



YAKIMA CHIEF HOPS™

SYLVA™ BRAND

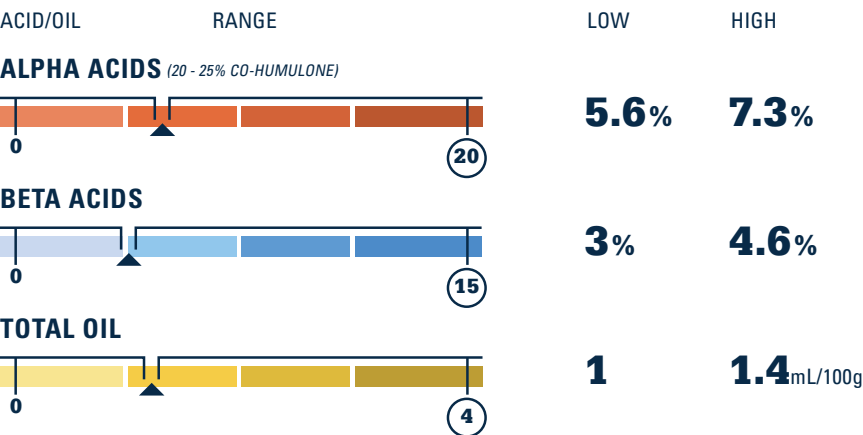


Bred in 1997 at Tasmanian Bushy Park Breeding Garden, Sylva™ is a result of open pollination of Czech Saaz. Brewing characteristics closely resemble that of its parent, with complex yet subtle floral and herbal characteristics.







| | |
|-----------|-------------------------|
| COUNTRY | AROMA PROFILE |
| AUSTRALIA | FLORAL • HERBAL • NOBLE |

BEER STYLES
LAGER • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN

| | | |
|---------------|-----------------------|---|
| B-PINENE | 26 - 36% OF TOTAL OIL |  |
| MYRCENE | | |
| LINALOOL | | |
| CARYOPHYLLENE | 5 - 8% OF TOTAL OIL |  |
| FARNESENE | 25% OF TOTAL OIL |  |
| HUMULENE | 18 - 27% OF TOTAL OIL |  |
| GERANIOL | | |
| SELINENE | <1% OF TOTAL OIL |  |
| OTHER | 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

ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (15 - 17% CO-HUMULONE)



6%

7.5%

BETA ACIDS



7%

8%

TOTAL OIL



1.5

2_{mL/100g}

TOTAL OIL BREAKDOWN

| | | |
|---------------|-------------------------|--|
| B-PINENE | 0.8 - 1.2% OF TOTAL OIL | |
| MYRCENE | 55 - 65% OF TOTAL OIL | |
| LINALOOL | 0.4 - 0.8% OF TOTAL OIL | |
| CARYOPHYLLENE | 3 - 5% OF TOTAL OIL | |
| FARNESENE | <1% OF TOTAL OIL | |
| HUMULENE | 8 - 12% OF TOTAL OIL | |
| GERANIOL | 0.1 - 0.4% OF TOTAL OIL | |
| SELINENE | | |
| OTHER | 15 - 32% OF TOTAL OIL | |



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

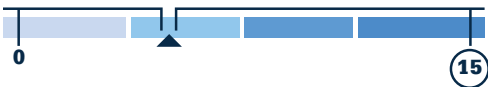
ALPHA ACIDS (35 - 40% CO-HUMULONE)



9.5%

12.5%

BETA ACIDS



4.3%

5.7%

TOTAL OIL



1.2

1.4 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

45 - 55% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

8 - 10% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

17 - 22% OF TOTAL OIL

GERANIOL

SELINENE

12 - 29% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

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

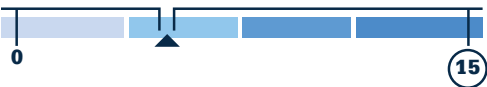
ALPHA ACIDS (20 - 25% CO-HUMULONE)



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

CARYOPHYLLENE

6 - 11% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

22 - 33% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

4 - 40% OF TOTAL OIL



YAKIMA CHIEF HOPS™

TETTNANG



Originating from the traditional landrace variety from Germany, Tett nang 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 Tett nang is grown in Washington State and Oregon.

COUNTRY
UNITED STATES

AROMA PROFILE
NOBLE

BEER STYLES

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



BREWING VALUES

ACID/OIL

RANGE

LOW

HIGH

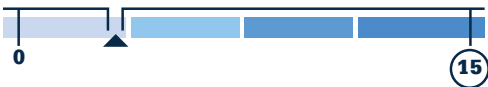
ALPHA ACIDS (25 - 28% CO-HUMULONE)



4%

6%

BETA ACIDS



2.5%

4%

TOTAL OIL



0.4

1 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

0.3 - 0.5% OF TOTAL OIL

MYRCENE

30 - 40% OF TOTAL OIL

LINALOOL

0.6 - 0.8% OF TOTAL OIL

CARYOPHYLLENE

10 - 14% OF TOTAL OIL

FARNESENE

5 - 8% OF TOTAL OIL

HUMULENE

25 - 30% OF TOTAL OIL

GERANIOL

0.2 - 0.4% OF TOTAL OIL

SELINENE

6 - 29% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™

TETTNANG



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

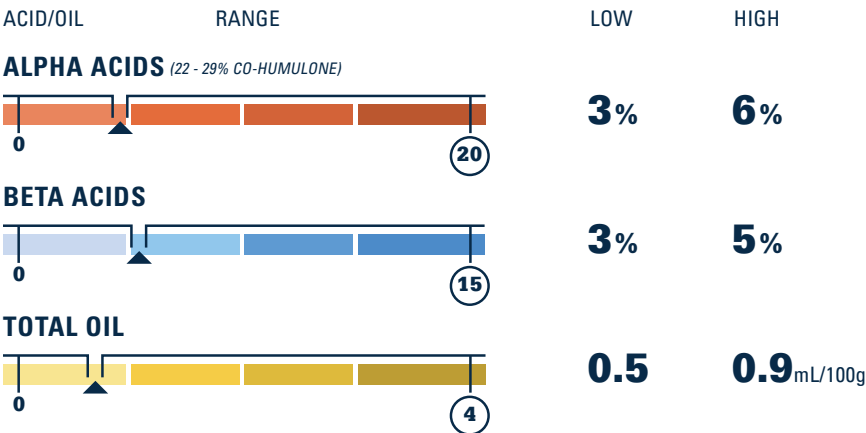
COUNTRY
GERMANY

AROMA PROFILE
SPICY • PEPPER • BLACK TEA

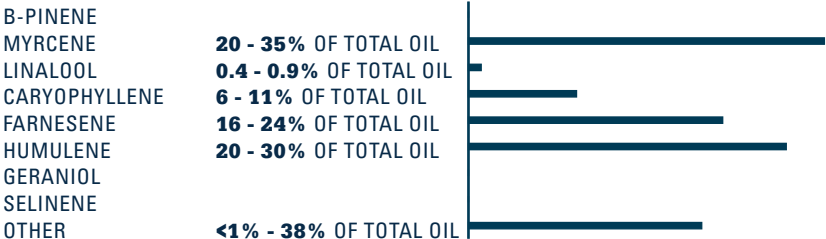
BEER STYLES

LAGER • WHEAT • GERMAN-STYLE ALE • PILSNER

BREWING VALUES



TOTAL OIL BREAKDOWN



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

ACID/OIL

RANGE

LOW

HIGH

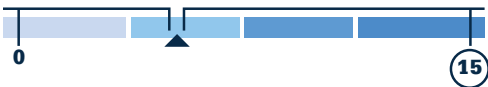
ALPHA ACIDS (28 - 30% CO-HUMULONE)



15%

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

18 - 38% OF TOTAL OIL

OTHER



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

1 - 3% OF TOTAL OIL

SELINENE

13 - 49% OF TOTAL OIL

OTHER



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

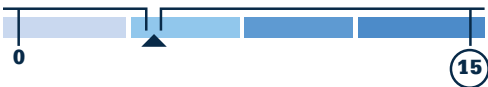
ALPHA ACIDS (24 - 30% CO-HUMULONE)



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

ACID/OIL

RANGE

LOW

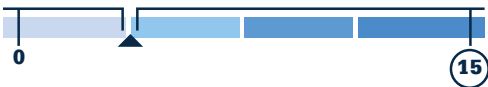
HIGH

ALPHA ACIDS (21 - 25% CO-HUMULONE)



10.3% 11.2%

BETA ACIDS



3.3% 4.2%

TOTAL OIL



1.1 1.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

39 - 55% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

3 - 5% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

7 - 11% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

28 - 50% OF TOTAL OIL



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

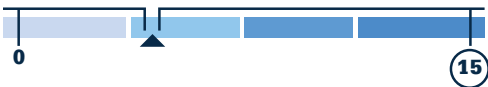
ALPHA ACIDS (20 - 23% CO-HUMULONE)



8%

9%

BETA ACIDS



4%

4.7%

TOTAL OIL



1.5

2_{mL}/100g

TOTAL OIL BREAKDOWN

B-PINENE

60% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

6.1% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

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.

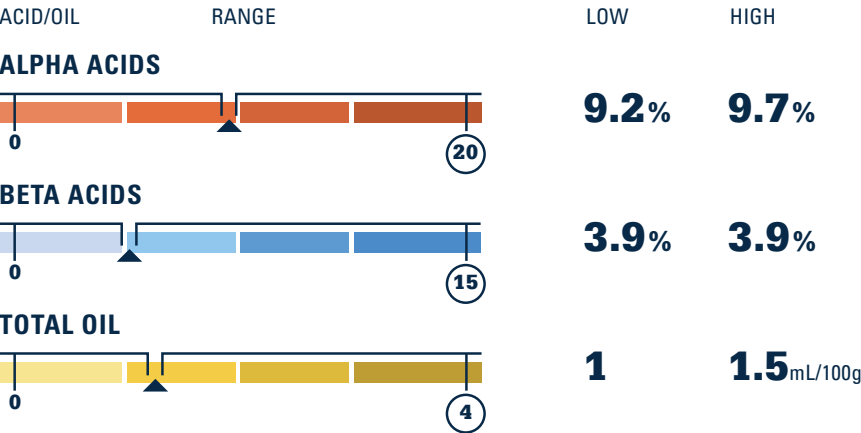
COUNTRY
UNITED STATES

AROMA PROFILE
MILD • FLORAL BOUQUET

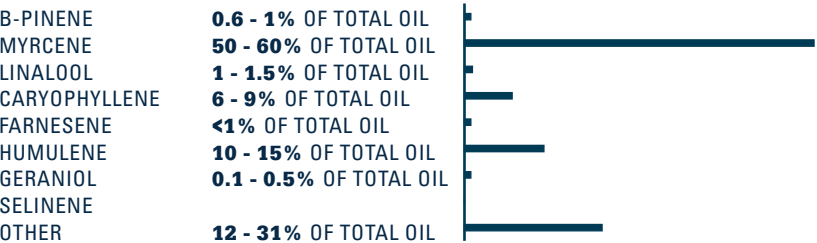
BEER STYLES
LAGER • PILSNER • WHEAT



BREWING VALUES



TOTAL OIL BREAKDOWN



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



ACID/OIL

RANGE

LOW

HIGH

ALPHA ACIDS (18 - 20% CO-HUMULONE)



4.5%

6.5%

BETA ACIDS



5.5%

7%

TOTAL OIL



0.5

1 mL/100g

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 | |



YAKIMA CHIEF HOPS™

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

ACID/OIL

RANGE

LOW

HIGH

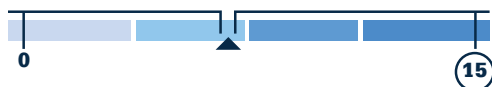
ALPHA ACIDS (51 - 56% CO-HUMULONE)



14%

17%

BETA ACIDS



6.1%

7.8%

TOTAL OIL



2.2

2.8 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

38 - 41% OF TOTAL OIL

MYRCENE

LINALOOL

CARYOPHYLLENE

11 - 15% OF TOTAL OIL

FARNESENE

<1% OF TOTAL OIL

HUMULENE

12 - 21% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

22 - 38% OF TOTAL OIL



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

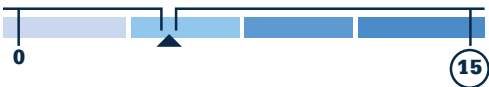
ALPHA ACIDS (22 - 24% CO-HUMULONE)



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

FARNESENE

HUMULENE

GERANIOL

SELINENE

OTHER

9% OF TOTAL OIL

13% OF TOTAL OIL

28% OF TOTAL OIL

47% OF TOTAL OIL



YAKIMA CHIEF HOPS™

WAIMEA™ BRAND



HORT3953

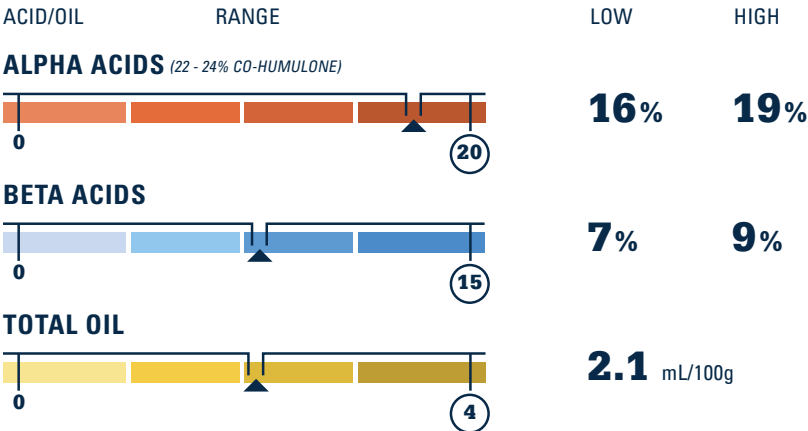
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 2012, Waimea's lineage includes Californian Late Cluster, Saaz and Fuggle. Waimea is a big hop for big beers and can be used across an array of styles in a variety of brew house and dry hopping applications.

COUNTRY
**NEW
ZEALAND**

AROMA PROFILE
CITRUS • PINE • HERBAL

BEER STYLES
IPA • LAGER

BREWING VALUES



TOTAL OIL BREAKDOWN

| | |
|---------------|-------------------|
| B-PINENE | 60% OF TOTAL OIL |
| MYRCENE | |
| LINALOOL | 2.6% OF TOTAL OIL |
| CARYOPHYLLENE | 5% OF TOTAL OIL |
| FARNESENE | 9.5% OF TOTAL OIL |
| HUMULENE | |
| GERANIOL | |
| SELINENE | |
| OTHER | 23% OF TOTAL OIL |



YAKIMA CHIEF HOPS™

WAKATU™ BRAND



77-05

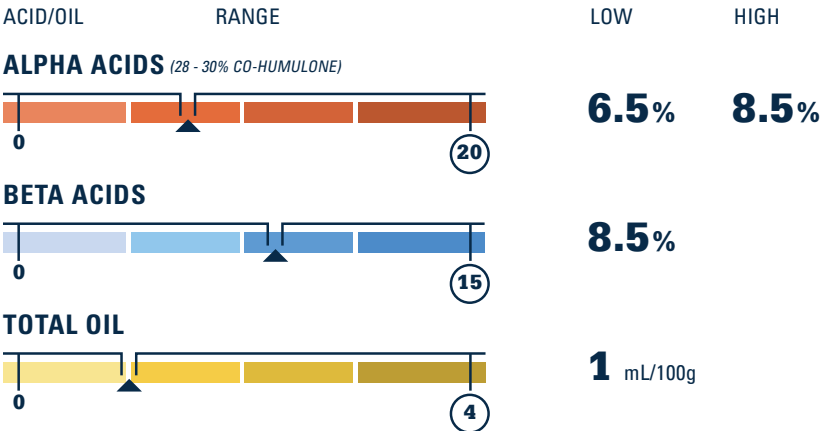
Developed by the New Zealand Institute for Plant and Food Research hop breeding program and released in 1988, as Hallertau Aroma, Wakatu™ was renamed in 2011. It is a triploid variety with two thirds Hallertau Mittelfrüh parentage. Wakatu™ is a well rounded variety with strong, fresh citrus characteristics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

COUNTRY
NEW ZEALAND

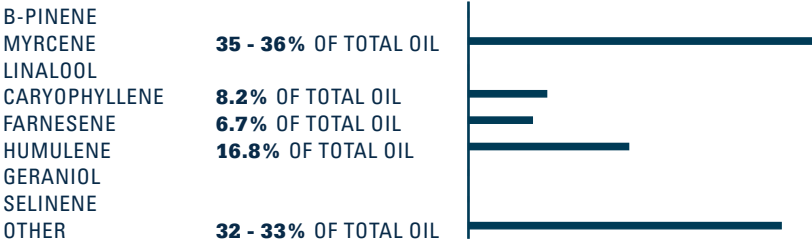
AROMA PROFILE
LIME ZEST • FLORAL

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

ACID/OIL

RANGE

LOW

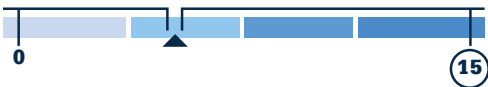
HIGH

ALPHA ACIDS (25 - 28% CO-HUMULONE)



15.5% 18%

BETA ACIDS



4.4% 6%

TOTAL OIL



1 2.5 mL/100g

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 | |



YAKIMA CHIEF HOPS™

WHITBREAD GOLDING

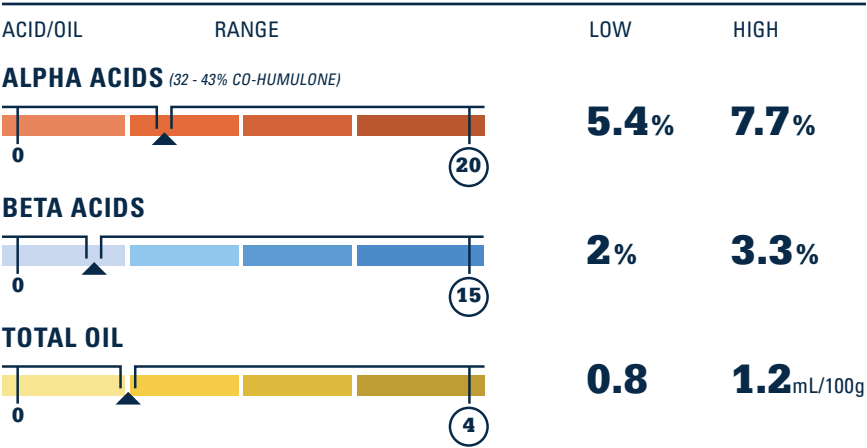
Developed through grower selection circa 1911, Whitbread Golding (WGV) is not a true Golding. It displays many similar characteristics but has more robust and slightly sweet, hoppy flavor.

| | |
|----------------|------------------------------------|
| COUNTRY | AROMA PROFILE |
| UNITED KINGDOM | FRESH EARTH • FLORAL • SWEET FRUIT |






BEER STYLES

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

BREWING VALUES



TOTAL OIL BREAKDOWN

| | | |
|---------------|-----------------------|---|
| B-PINENE | 19 - 27% OF TOTAL OIL |  |
| MYRCENE | | |
| LINALOOL | | |
| CARYOPHYLLENE | 11 - 15% OF TOTAL OIL |  |
| FARNESENE | 1 - 2% OF TOTAL OIL |  |
| HUMULENE | 35 - 42% OF TOTAL OIL |  |
| GERANIOL | | |
| SELINENE | | |
| OTHER | 14 - 34% OF TOTAL OIL |  |



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

ACID/OIL

RANGE

LOW

HIGH

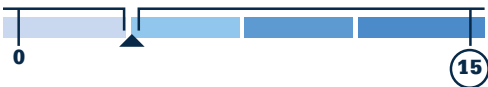
ALPHA ACIDS (28 - 32% CO-HUMULONE)



4.5%

6.5%

BETA ACIDS



3%

4.5%

TOTAL OIL



0.6

1.6 mL/100g

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

8 - 27% OF TOTAL OIL

OTHER



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

ACID/OIL

RANGE

LOW

HIGH

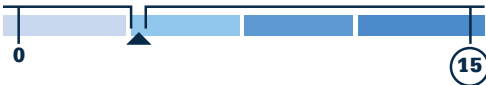
ALPHA ACIDS (21 - 23% CO-HUMULONE)



7%

8%

BETA ACIDS



3.5%

4.5%

TOTAL OIL



0.5

1.5 mL/100g

TOTAL OIL BREAKDOWN

B-PINENE

0.2 - 0.6% OF TOTAL OIL

MYRCENE

35 - 45% OF TOTAL OIL

LINALOOL

0.1 - 0.5% OF TOTAL OIL

CARYOPHYLLENE

5 - 9% OF TOTAL OIL

FARNESENE

8 - 12% OF TOTAL OIL

HUMULENE

18 - 24% OF TOTAL OIL

GERANIOL

SELINENE

OTHER

9 - 34% OF TOTAL OIL



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

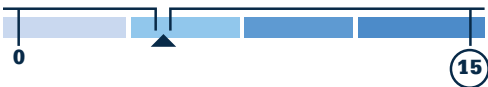
HIGH

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

18 - 38% OF TOTAL OIL

OTHER



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

ACID/OIL

RANGE

LOW

HIGH

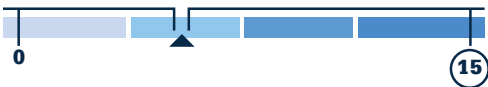
ALPHA ACIDS (28 - 31% CO-HUMULONE)



10%

12.5%

BETA ACIDS



4.7%

6.2%

TOTAL OIL



0.8

1.5 mL/100g

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

11.1 - 46.6% OF TOTAL OIL

OTHER



YAKIMA CHIEF HOPS™