

Bittering Hop Varieties

Brewer's Gold

- Grown: UK, US
- Profile: Poor aroma; Sharp bittering hop.
- Usage: Bittering for ales
- AA Range: 8 - 9%
- Substitute: Bullion, Northern Brewer, Galena

Bullion

- Grown: UK (maybe discontinued), US
- Profile: Poor aroma; Sharp bittering and black currant-like flavor when used in the boil.
- Usage: Bittering hop for British style ales, perhaps some finishing
- AA Range: 8 - 11%
- Substitute: Brewer's Gold, Northern Brewer

Centennial

- Grown: US
- Profile: Spicy, floral, citrus aroma, often referred to as Super Cascade because of the similarity; A clean bittering hop.
- Usage: General purpose bittering, aroma, some dry hopping
- Example: Sierra Nevada Celebration Ale, Sierra Nevada Bigfoot Ale
- AA Range: 9 - 11.5%
- Substitute: Cascade, Columbus

Challenger

- Grown: UK
- Profile: Strong, fine spicy aroma widely used for English Bitters; A clean bittering hop.
- Usage: Excellent bittering hop, also used for flavoring and aroma.
- Example: Full Sail IPA, Butterknowle Bitter
- AA Range: 6 - 8%
- Substitute: Progress

Chinook

- Grown: US
- Profile: Heavy spicy aroma; Strong versatile bittering hop, cloying in large quantities
- Usage: Bittering
- Example: Sierra Nevada Celebration Ale, Sierra Nevada Stout
- AA Range: 12 - 14%
- Substitute: Galena, Eroica, Brewer's Gold, Nugget, Bullion

Cluster

- Grown: US, Australia
- Profile: Small, spicy aroma; Sharp, clean bittering hop
- Usage: General purpose bittering (Aussie version has a better aroma and is used as finishing hop)
- Example: Winterhook Christmas Ale
- AA Range: 5.5 - 8.5%
- Substitute: Galena, Eroica, Cascade

Columbus

- Grown: US
- Profile: Strong fine herbal flavor and aroma; Solid, clean bittering hop
- Usage: Excellent general purpose bittering, flavoring and aroma hop.
- Example: Anderson Valley IPA, Full Sail Old Boardhead Barleywine
- AA Range: 13-16%
- Substitute: Centennial, Chinook, Galena, Nugget

Eroica

- Grown: US
- Profile: Good bittering hop;
- Usage: Good general purpose bittering
- Example: Ballard Bitter, Blackhook Porter, Anderson Valley Boont Amber
- AA Range: 12-14%
- Substitute: Northern Brewer, Galena

Galena

- Grown: US
- Profile: Strong, clean bittering hop
- Usage: General purpose bittering
- Example: The most widely used commercial bittering hop in the US.
- AA Range: 12 - 14%
- Substitute: Cluster, Northern Brewer, Nugget

Northern Brewer

- Grown: UK, US, Germany (called Hallertauer NB), and other areas (growing region affects profile greatly)
- Profile: Hallertauer NB has a fine, fragrant aroma; Dry, clean bittering hop
- Usage: Bittering and finishing for a wide variety of beers
- Example: Old Peculiar (bittering), Anchor Liberty (bittering), Anchor Steam (bittering, flavoring, aroma)
- AA Range: 7 - 10%
- Substitute: Perle

Northdown

- Grown: UK
- Profile: Similar to Northern Brewer, but with a better flavor and aroma than domestic NB; A clean bittering hop.
- Usage: General purpose bittering, flavor and aroma for heavier ales.
- Example: Fuller's ESB
- AA Range: 7 - 8%
- Substitute: Northern Brewer, Target

Nugget

- Grown: US
- Profile: Heavy, spicy, herbal aroma; Strong bittering hop
- Usage: Strong bittering, some aroma uses
- Example: Sierra Nevada Porter & Bigfoot Ale, Anderson Valley ESB
- AA Range: 12 - 14%
- Substitute: Galena, Chinook, Cluster

Perle

- Grown: Germany, US
- Profile: Pleasant aroma; Slightly spicy, almost minty, bittering hop
- Usage: General purpose bittering for all lagers
- Example: Sierra Nevada Summerfest
- AA Range: 7 - 9.5%
- Substitute: Northern Brewer, Cluster, Tettnanger

Pride Of Ringwood

- Grown: Australia
- Profile: Poor, citric aroma; Clean bittering hop
- Usage: general purpose bittering
- Example: Most Australian beers.
- AA Range: 9 - 11%
- Substitute: Cluster

Target

- Grown: UK
- Profile: Strong herbal aroma can be too strong for lagers; A clean bittering hop.
- Usage: Widely used bittering and flavoring hop for strong ales.
- Example: Fuller's Hock, Morrells Strong Country Bitter
- AA Range: 8 - 10%
- Substitute: Northdown

Aroma Hop Varieties

British Columbia (BC) Goldings

- Grown: Canada
- Profile: Earthy, rounded, mild aroma; Spicy flavor
- Usage: Bittering, finishing, dry hopping for British style ales. Used as a domestic substitute for East Kent Goldings. Not quite as good as EK.
- AA Range: 4.5 - 7%
- Substitute: EK Goldings

Cascade

- Grown: US
- Profile: Strong spicy, floral, citrus (i.e. grapefruit) aroma.
- Usage: The defining aroma for American style Pale ales. Used for bittering, finishing, and especially dry hopping.
- Example: Anchor Liberty Ale & Old Foghorn Barleywine, Sierra Nevada Pale Ale
- AA Range: 4.5 - 8%
- Substitute: Centennial

Crystal a.k.a. CJF-Hallertau.

- Grown: US
- Profile: Mild, pleasant, slightly spicy. One of three hops bred as domestic replacements for Hallertauer Mittelfrüh.
- Usage: Aroma/finishing/flavoring
- AA Range: 2 - 5%
- Substitute: Hallertauer Mittelfrüh, Hallertauer Hersbrucker, Mount Hood, Liberty, Ultra

East Kent Goldings (EKG)

- Grown: UK
- Profile: Spicy/floral, earthy, rounded, mild aroma; spicy flavor
- Usage: Bittering, finishing, dry hopping for British style ales
- Example: Young's Special London Ale, Samuel Smith's Pale Ale, Fuller's ESB
- AA Range: 4.5 - 7%
- Substitute: BC Goldings, Whitbread Goldings Variety

Fuggles

- Grown: UK, US, and other areas
- Profile: Mild, soft, grassy, floral aroma
- Usage: Finishing / dry hopping for all ales, dark lagers
- Example: Samuel Smith's Pale Ale, Old Peculiar, Thomas Hardy's Ale
- AA Range: 3.5 - 5.5%
- Substitute: East Kent Goldings, Willamette, Styrian Goldings

Hallertauer Hersbrucker

- Grown: Germany
- Profile: Pleasant, spicy/mild, noble, earthy aroma
- Usage: Finishing for German style lagers
- Example: Wheathook Wheaten Ale
- AA Range: 2.5 - 5%
- Substitute: Hallertauer Mittelfrüh, Mt. Hood, Liberty, Crystal, Ultra

Hallertauer Mittelfrüh

- Grown: Germany
- Profile: Pleasant, spicy, noble, mild herbal aroma
- Usage: Finishing for German style lagers
- Example: Sam Adam's Boston Lager, Sam Adam's Boston Lightship
- AA Range: 3 - 5%
- Substitute: Hallertauer Hersbruck, Mt. Hood, Liberty, Crystal, Ultra

Liberty

- Grown: US
- Profile: Fine, very mild aroma. One of three hops bred as domestic replacements for Hallertauer Mittelfrüh.
- Usage: Finishing for German style lagers
- Example: Pete's Wicked Lager
- AA Range: 2.5 - 5%
- Substitute: Hallertauer Mittelfrüh, Hallertauer Hersbruck, Mt. Hood, Crystal, Ultra

Mt. Hood

- Grown: US
- Profile: Mild, clean aroma. One of three hops bred as domestic replacements for Hallertauer Mittelfrüh.
- Usage: Finishing for German style lagers
- Example: Anderson Valley High Rollers Wheat Beer
- AA Range: 3.5 - 8%
- Substitute: Hallertauer Mittelfrüh, Hallertauer Hersbrucker, Liberty, Tettnang, Ultra

Progress

- Grown: UK
- Profile: Assertive fruity aroma
- Usage: Widely used for real cask ales.
- Example: Hobson's Best Bitter, Mansfield Bitter
- AA Range: 5 - 6%
- Substitute: Fuggles, Whitbread Goldings Variety

Saaz

- Grown: Czechoslovakia
- Profile: Delicate, mild, floral aroma
- Usage: Finishing for Bohemian style lagers
- Example: Pilsener Urquell
- AA Range: 2 - 5%
- Substitute: Tettnang, Spalt, Ultra (some would claim there is no substitute)

Spalt

- Grown: Germany/US
- Profile: Mild, pleasant, slightly spicy
- Usage: Aroma/finishing/flavoring, some bittering
- AA Range: 3 - 6%
- Substitute: Saaz, Tettnang, Ultra

Styrian Goldings

- Grown: Yugoslavia (seedless Fuggles grown in Yugoslavia), also grown in US
- Profile: Similar to Fuggles
- Usage: Bittering/finishing/dry hopping for a wide variety of beers, popular in Europe, especially UK.
- Example: Ind Coope's Burton Ale, Timothy Taylor's Landlord
- AA Range: 4.5 - 7
- Substitute: Fuggles, Willamette

Tettnang

- Grown: Germany, US
- Profile: Fine, spicy aroma
- Usage: Finishing for German style beers
- Example: Gulpener Pilsener, Sam Adam's Oktoberfest, Anderson Valley ESB, Redhook ESB
- AA Range: 3 - 6%
- Substitute: Saaz, Spalt, Ultra

Willamette

- Grown: US
- Profile: Mild, spicy, grassy, floral aroma
- Usage: Finishing / dry hopping for American / British style ales
- Example: Sierra Nevada Porter, Ballard Bitter, Anderson Valley Boont Amber, Redhook ESB
- AA Range: 4 - 7%
- Substitute: Fuggles

Whitbread Goldings Variety (WGV)

- Grown: UK
- Profile: Flowery, fruity, a cross between Goldings and a Fuggle.
- Usage: Often combined with other varieties in Bitters
- Example: Whitbread Best Bitter
- AA Range: 4 - 5%
- Substitute: Progress, Fuggles, EKG

Ultra

- Grown: US
- Profile: Very fine, mild, spicy with floral notes
- Usage: Excellent finishing hop for Pilsner and German style lagers.
- Example: (too new)
- AA Range: 2-5%
- Substitute: Any Noble hop, Crystal, Liberty, Mt. Hood