

# What's New *with* British Hops?

BY ALISON CAPPER





**In 1906**, the United Kingdom became the first country in the world to create a scientific hop-breeding program. The hops bred in the UK's natural environment have characteristic flavors that are different from those of hops grown elsewhere. They benefit from the natural resources available and require little, if any, irrigation, making them some of the most sustainable hops in the world. >>>

British hops are special thanks to the UK's latitude, climate, soil, irradiation (hours of sunshine), and unique breeding history. This sustainable terroir gives British hops lower levels of the essential oil myrcene than hops grown anywhere else in the world, and lower myrcene levels make for especially delicate and complex aromas. Flavorful British hops offer strong provenance, an unrivaled heritage, and the ability to brew some of the world's best session beers.

## BRITISH HOPS HISTORY

Hops were introduced to Britain from Flanders at the end of the 15th century. Until then, the national drink had been ale, which was unhopped and sometimes flavored with herbs. Brewers initially used

hops solely to preserve beer, but by the 17th century, hopped beer had overtaken unhopped ale, and cultivation grew rapidly. It was a golden age for hops in Britain, and acreage continued to increase until 1878, when it reached its peak.

The oldest British hop cultivar is Goldings, which was discovered in 1790. Goldings is referred to in the plural because it is a "family" of similar hop varieties. In 1737, British hop growers recognized the significance of their discovery of Mathon (also called Canterbury Whitebine) and went on to create a family of Goldings that included:

- Old Golding in 1790
- East Kent Golding in 1838
- Cobbs in 1881

- Early Bird (also referred to as Amos) in 1887
- Eastwell Golding in 1889
- Whitbread Golding Variety in 1932
- Early Choice in 1948

Every new "Goldings" hop is named after either its grower, its location, its harvest date, or a brewer. It remains the most sought after and most widely grown of all the British hop varieties. It is also worth noting that Goldings is referred to as "head of the family tree" for British hops and has been used to create the majority of hop varieties bred and grown commercially in Britain.

Hops once flourished in almost every region of the UK. But by 1909, hops were commonly imported because breweries that had been contracted to brew foreign beers under license were required to use the hops stipulated in the original recipes.

With Verticillium wilt, which kills hops plants, and the many changes in UK taxes, as well as the increasing popularity of lager over traditional British beers in the 20th century, breweries required fewer hops, and British hop acreage fell dramatically.

Today's British hop farms are largely confined to the counties of Herefordshire and Worcestershire in the West Midlands (50 percent) and Kent in the South East (50 percent). These two areas of the UK have unique terroir, great soils, and a mild maritime climate.

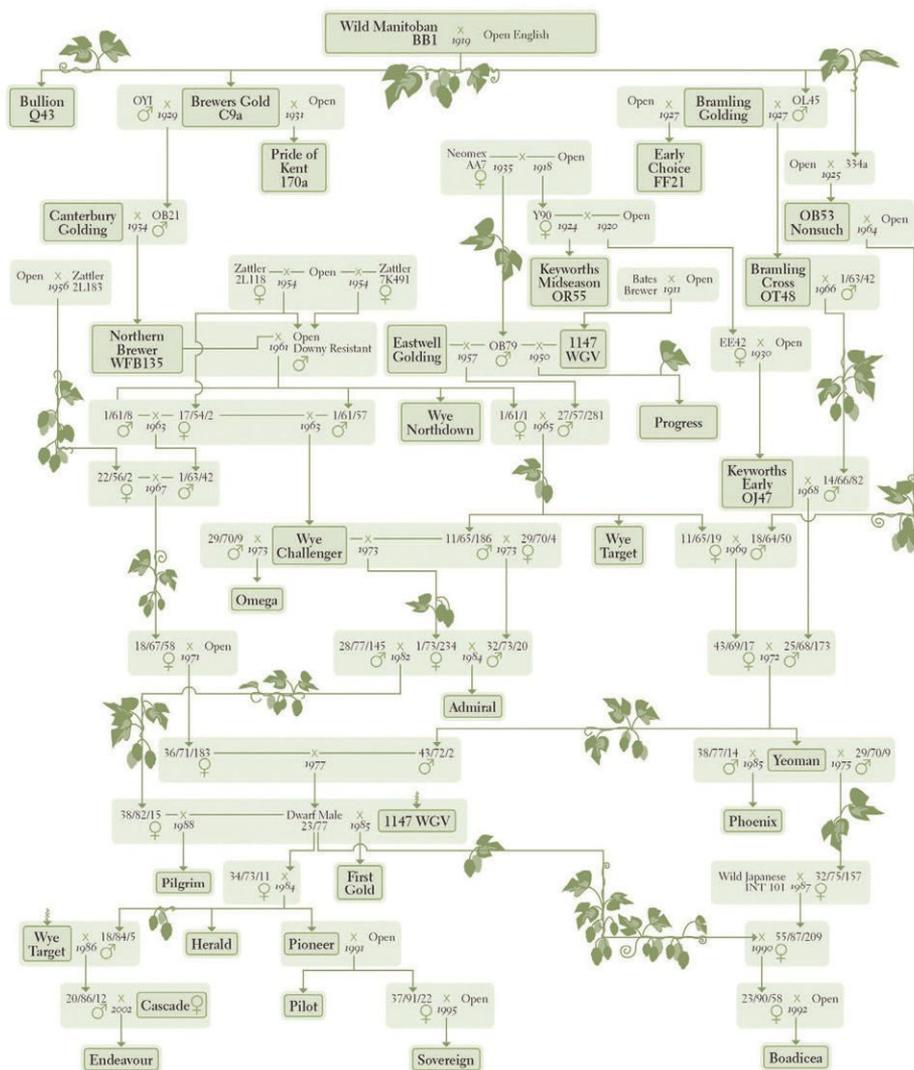
The UK is the only hop-growing region of the world with this climate, meaning that it has low light levels; warm, damp summers; and mild winters, which ensures that the annual temperature range is less extreme than that of any other hop-growing climate.

## BREATHING NEW LIFE INTO BRITISH HOPS

British hop acreage has been stable for the last 15 years, and British hops have recently seen a resurgence. My obsession with hops began at the BrauBeviale trade fair in Nuremberg, Germany, in November 2011 and was reinforced by a visit to the

# THE FAMILY TREE OF ENGLISH HOP VARIETIES

All details courtesy of Dr Peter Darby





American Craft Brewers Conference (CBC) in San Diego in May 2012. I traveled to both of these internationally renowned trade fairs to understand the size and scope of the market for British hops.

After being selected to join the Nuffield Farming Scholarships program at the end of 2012, I began to research the international hop industry. I traveled to Oregon, Washington, New Zealand, Canada, France, Belgium, and Vietnam to learn about hop growing and brewing. And I attended the American Hop Growers Congress and Hop Research Council meetings.

Following hundreds of conversations with brewers from all over the world, I realized that there was a huge opportunity for the British hop industry. Craft brewers loved hops and used lots of them, but British hops were “hiding in the warehouse,” with no brand, no website, and no unique selling point.

As a farm, we started working closely with Charles Faram, Inc. to promote British hops to brewers around the world. I also started to understand the importance of the homebrewing market. Homebrewers are similar to commercial brewers in that they are always looking to try something new and different.

My husband Richard and I realized that American homebrewers were finding it



difficult to access a high-quality range of British hops, so we set up a new business enterprise to sell hops direct to homebrewers: Stocks Farm HomeBrew Hops. We grow a range of experimental hops, which we supply both as whole leaf and as pellets.

Of the 100 acres (40 hectares) of hops in total at Stocks Farm, approximately 40 percent is exported to the USA. As one of the largest hop grower in the UK, these 100 acres of hops can make 46 million pints of beer in a good year!

Today, our farm is trialing more than 25 experimental cultivars and growing the established varieties Olicana®, Endeavour, First Gold, Goldings, Jester®, Phoenix, Pilgrim, Sovereign, and Target. Stocks Farm is the first UK hop farm to sell “fresh from farm” hops direct to customers, and the new experimental GP75 has proved a great success with UK homebrewers this year.

Despite an overall decrease in acreage, British hops have seen a resurgence in the last few years.

**Endeavour** started on the Wye Hops Ltd Development Program in 2002 and is a cross between Cascade and a low-trellis hop. It has complex blackcurrant, loganberry, summer fruit and spice notes, and wonderful grapefruit and lime citrus flavors.

- Alpha acids: 8–10.5%
- Beta acids: 3.8–5.3%

- Cohumulone: 30–36%
- Myrcene: 27–37%

**Jester®** is from the Charles Faram & Co Ltd Hop Development Program in 2015. Breeding is proprietary and brings New World flavors to the UK. It is fairly tolerant of all diseases including wilt. Jester® has an intense, punchy aroma of new world proportions, with flavor notes of grapefruit, tropical fruits and herbal.

- Alpha acids: 7–10%
- Beta acids: 4–6%
- Cohumulone: 23–28%
- Myrcene: 45–50%

**GP75** is from the Wye Hops Ltd Development Program. The hop is out of the British hop collection and was originally from a cross made in 1978 between 19/73/3 (a granddaughter of OR55) and male 321 (a seedling of Neomex). It is well tolerant with aromas of pungent grapefruit, lime, and citrus.

VARIETY	FLAVOR INTENSITY (0–10)	TYPICAL ALPHA ACID (%)	CHARACTERISTICS
Jester®	9	7–9	Grapefruit, tropical fruits, lychee
GP75 (experimental)	9	6–7	Pungent lime and citrus
Olicana®	8	7–9	Mango, grapefruit, passionfruit
Target	8	8.5–13.5	Sage, citrus, spice
Endeavour	7	8–10	Blackcurrant, spice, citrus
Pilgrim	6	9–13	Spicy, citrus, pear
First Gold	6	6.5–10	Orange, marmalade, spice
Goldings	6	4–9.5	Spicy, honey, earthy
Sovereign	6	4.5–6.5	Herbal, floral, earthy
Phoenix	5	8–12	Molasses, chocolate, spice
GN37 (experimental)	5	unknown	Floral, honey, grassy

# GP75 Pale Ale



*Recipe courtesy of Sarah Saleh, The Unity Brew House*

This pale ale has a simple malt bill to allow the fantastic flavor of GP75 hops to shine through, giving amazing tropical and citrus fruit flavors. Bittering hops are minimal due to the bittering effect of the large amounts of aroma and post-boil hops.

**Batch Size:** 5 US gallons (18.9 L)  
**Original Gravity:** 1.058 (14.2° P) @ 80% efficiency  
**Final Gravity:** 1.012 (3.1° P)  
**Color:** 3 SRM  
**Bitterness:** 35 IBU  
**Alcohol:** 6% by volume

## Yeast

Fermentis Safale S-04

## Additional Items

1 Whirlfloc tablet @ 15 min

## Directions

Mash grains at 147° F (64° C) for one hour and sparge at 170° F (77° C). Boil for 60 minutes, adding hops and Whirlfloc according to the schedule above. Chill wort, pitch properly rehydrated yeast, and ferment at 65° F (18° C) until terminal gravity is reached.

## Malts

**3.39 kg** (7.5 lb.) extra pale ale malt or lager malt  
**810 g** (1.8 lb.) pale ale malt  
**327 g** (12 oz.) torrifed wheat

## Hops

**8 g** (0.3 oz.) GP75, 6.6% a.a. @ 60 min  
**45 g** (1.6 oz.) GP75, 6.6% a.a. @ 5 min  
**50 g** (1.8 oz.) GP75, 6.6% a.a. @ flameout  
**75 g** (2.7 oz.) GP75, 6.6% a.a., dry hop

## Extract Version

Substitute malts with 6 lb. (2.72 kg) Maris Otter liquid malt extract and 2.12 lb. (962 g) wheat liquid malt extract. Dissolve extract in water, top up to desired boil volume with reverse osmosis water, and proceed as above.

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# Golden Ale

*Recipe courtesy of Sarah Saleh, The Unity Brew House*

A light, easy-drinking ale with fruity hop aromas and flavors from the combination of Endeavour's citrus and loganberry and First Gold's orange and floral notes.

**Batch Size:** 5 US gallons (18.9 L)  
**Original Gravity:** 1.041 (10° P) @ 80% efficiency  
**Final Gravity:** 1.009 (2.3° P)  
**Color:** 4 SRM  
**Bitterness:** 20 IBU  
**Alcohol:** 4.2% by volume

## Malts

**3 kg** (6.6 lb.) pale ale malt  
**100 g** (3.5 oz.) torrified wheat  
**70 g** (2.5 oz.) pale rye malt

## Hops

**4 g** (0.1 oz.) Endeavour, 9.8% a.a. @ 60 min  
**18 g** (0.6 oz.) Endeavour, 9.8% a.a. @ 5 min  
**22 g** (0.8 oz.) First Gold, 7.2% a.a. @ flameout

## Yeast

Fermentis Safale S-04

## Additional Items

1 Whirlfloc tablet @ 15 min

## Directions

Mash grains at 147° F (64° C) for one hour and sparge at 170° F (77° C). Boil for 60 minutes, adding hops and Whirlfloc according to the schedule above. Chill wort, pitch properly rehydrated yeast, and ferment at 65° F (18° C) until terminal gravity is reached.

## Extract Version

Substitute malts with 5.3 lb. (2.38 kg) Maris Otter liquid malt extract and 8 oz. (227 g) rye liquid malt extract. Dissolve extract in water, top up to desired boil volume with reverse osmosis water, and proceed as above.

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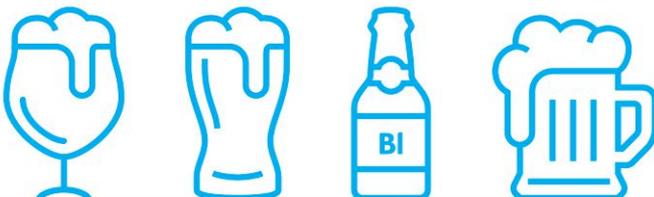
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- Alpha acids: 6–7%
- Beta acids: 5%
- Cohumulone: 47%

GP75 has produced some interesting results as a SMaSH (single malt and single hop) session beer. It is one to look out for in the future and, with the help of homebrewers, its true potential can shine.

### COMPARISON OF HOP OILS IN BRITISH AND US HOPS

*Humulus lupulus* (hops) are complex plants with more than 400 essential oil components in the tiny lupulin glands. If we take a closer look at the British hop varieties mentioned above, there is certainly food for thought when you compare some of these British hops with famous American hop varieties.

- **Alpha acid:** The higher the level of alpha acids, the higher the bittering potential. Jester® has an alpha percentage between those of Cascade and Centennial, while Endeavour is very close to Centennial.
- **Cohumulone:** GP75 has a high cohumulone level of 47%. Topaz is known for being the highest of all hop varieties at 50%.
- **Myrcene:** Myrcene is an indicator of aroma intensity, and Jester® has a myrcene level similar to that of Cascade.

**Hop Oil Comparison Table**

	Alpha Acid %	Cohumulone %	Farnesene %	Myrcene %
GP75	6–7	47		
Jester®	7–9	23–28	0.1–0.2	45–50
Endeavour	8–10.5	30–36	5–8	27–37
Cascade	5.5–9	30–35	6–9	45–60
Centennial	7–12	23–27	<1	55–65

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- **Farnesene:** Endeavour has higher farnesene levels than Cascade and, most importantly, it is similar to Fuggle, a hop not grown at Stocks Farm due to its susceptibility to wilt.

The Unity Brew House has recently opened at Stocks Farm, the first time ever that a brewery has opened on a hop farm in the UK. All of the beers are brewed with hops grown on the farm and processed in

the hop kilns less than a stone's throw away. Sarah Saleh, head brewer at The Unity Brew House, has put together the accompanying homebrew recipes using a few of these new British hop varieties.

In welcoming visitors from Australia, New Zealand, Canada, Europe, and the USA to our farm in Worcestershire, Richard and I offer an improved understanding of British hops, growers, and the UK industry. If you are ever in the UK and would like to visit Stocks Farm for a tour of the hop yards or for a beer at The Unity Brew House, you will be made very welcome. Please contact us to make an appointment.

**Alison Capper serves on the board of the British Hop Association and Wye Hops Ltd. The team at Stocks Farm are keen to hear your feedback on these recipes. If you would like to contact us or buy homebrew hops direct from the farm, please visit [stocksfarm.net](http://stocksfarm.net) or email [hello@stocksfarm.net](mailto:hello@stocksfarm.net). For further information on the British Hop Association, please visit [british-hops.org.uk](http://british-hops.org.uk).**

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