



Foreword

In November 2011 Germany's leading provider of hop-related services, Joh. Barth & Sohn, presented volume one of the Hop Aroma Compendium – earning with it a few sceptical glances. Tasting of hop varieties? Differentiating and describing hop aromas? Who would be interested in that? We were convinced with the project from the very beginning: we wanted to support all brewers who are keen to rediscover hops – not just in terms of their technical analytical value but by showing an interest in the hop aromas and their effects on the finished beer.

The initial scepticism surrounding our project has now been laid to rest. Recently, interest has been significant not only on the part of the brewing industry but also amongst the media, as four new hop varieties with special aroma components were released in Germany in the spring of 2012. We are delighted with this newly awakened interest in hops, specifically in Germany, where Joh. Barth & Sohn can enjoy at least some of the credit thanks to volume one of the Hop Aroma Compendium.

This having been said, it would certainly not be right to concentrate solely on Flavor Hops. In quantitative terms, they are – still – a small market segment, but in qualitative terms they promise to be a very interesting commodity. Exactly what Flavor Hops are is often somewhat unclear – and not just for the layman. But one thing is certain – they represent an opportunity to create unusual and sophisticated beers. Used in the brewing kettles of talented brewers, they can be a “divine” ingredient in the creation of glorious beer.

In 2012, we are now presenting a second volume of our Hop Aroma Compendium. And once again, our “tasting team” has succeeded in decoding and describing the aromas of 41 further hop varieties, including two new French hop varieties and one new American one. The main new addition to volume two is the “comparison of growing areas”. Here, hop varieties which are cultivated in different areas were compared. And it goes without saying that the four new varieties from Hüll, which have garnered so much attention, have not been forgotten...

As was the case for volume one, our renowned hop aroma team comprises two world champion beer sommeliers Karl Schiffner and Sebastian Priller-Riegele, and perfumist Frank Rittler. Those three and the experts at Joh. Barth & Sohn are due a particular vote of thanks.

Let me invite you on a further voyage through the diverse and incomparable world of hop aromas.

Stephan Barth

Polaris

Germany



Polaris is a new variety with an intense pleasant fruity aroma and a very refreshing note similar to a peppermint where fruity and resin notes come to the fore.

As can be gathered from the name of the cultivar, cool menthol notes of mint play a key part in the cold infusion complemented by sweet toffee and banana nuances. In the raw hops, spicy aromatic elements of cumarin, Artemesia, woodruff, lemon balm and bergamot can be distinguished. Fruity quince and pineapple add to the interesting overall picture.

Analytical values

Type	Aroma
Growing Area	Germany
Lineage	Hüll breeding line
Alpha acids*	18.0 - 23.0 %
Beta acids	4.5 - 6.0 %
Total Polyphenols	no data
Total oils	4.4 ml/100g
Myrcene	50.3 % of total
Linalool	0.2 % of total

The analytical values are typical for the variety at the time of harvest, but may vary according to crop year, growing region, grower and degree of ageing.

* The alpha content is determined by means of spectrophotometric analysis.

You can formulate your own flavour impressions here:



Chocolate
Lavender
Lemon grass
Jasmine
Passion fruit

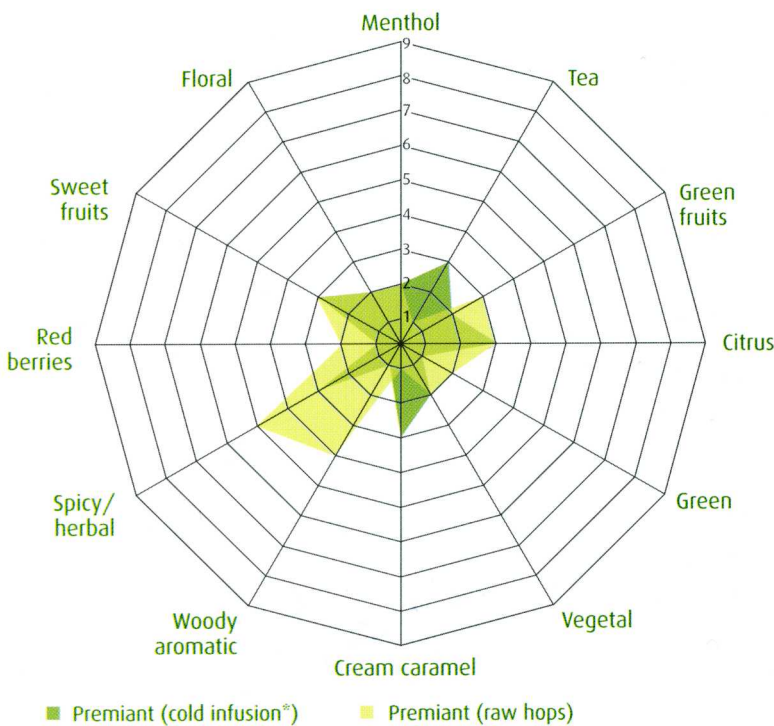
Premiant

Czech Republic



The Czech hop variety Premiant is derived from Saaz. It is characterised by strong growth and a pleasant mild aroma.

In the cold infusion, Premiant is dominated by tea-like and citrusy components such as lemon and lime in a sophisticated aromatic interplay with sweet chocolate and spicy curry, pepper and jasmine. In the raw hops, lemon grass, passion fruit, quince and lavender provide a spicy complement to the flavour profile.



Descriptor	This includes the following aromas:
Menthol	Mint, melissa, sage, metallic, camphor, pine
Tea	Green tea, camomile tea, black tea
Green fruits	Pear, quince, apple, gooseberry, wine yeast, ethereal, grape
Citrus	Grapefruit, orange, lime, lemon, bergamot, lemon grass, ginger, mandarin
Green	Green-grassy, tomato leaves, green peppers, nettel, thuja, basil, parsley
Vegetal	Celeriac, leek, onion, artichoke, garlic, wild garlic
Cream caramel	Butter, chocolate, yoghurt, gingerbread, honey, cream, caramel, toffee, coffee
Woody aromatic	Tobacco, cognac, barrique, hay, leather, tonka, woodruff, incense, myrrh, resin
Spicy/herbal	Lovage, pepper, chilli, curry, juniper, marjoram, tarragon, dill, lavender, aniseed, liquorice, fennel, thyme, rosemary, clove
Red berries	Cassis, blueberries, raspberries, blackberries, strawberries, redcurrants, forest berries
Sweet fruits	Banana, watermelon, honeydew melon, peach, apricot, passion fruit, lychee, dried fruit, plum, pineapple, white jelly bears, cherry, kiwi
Floral	Elderflower, camomile blossom, lily of the valley, jasmine, apple blossom, rose, geranium, carnation, elder

* for the cold infusion 2 gr of pellets was dissolved to 200 ml water (20 °C) for 30 min and subsequently evaluated in order to simulate to some extent the change in aroma through dry hopping.

Columbus



Columbus, Tomahawk and Zeus are currently the three most important high alpha varieties. All three have Nugget as the female parent and are therefore half sisters. The outstanding feature of these cultivars is their high aromatic density. This variety is grown in Spain and France in addition to the USA.

Analytical values	
Type	High Alpha
Growing Area	France, origin USA
Lineage	Daughter of Nugget
Alpha acids*	9.5 - 12.0 %
Beta acids	4.5 - 5.5 %
Total Polyphenols	no data
Total oils	1.4 - 2.0 ml/100g
Myrcene	30.0 - 50.0 % of total
Linalool	0.2 % of total

The analytical values are typical for the variety at the time of harvest, but may vary according to crop year, growing region, grower and degree of ageing.

* The alpha content is determined by means of spectrophotometric analysis.

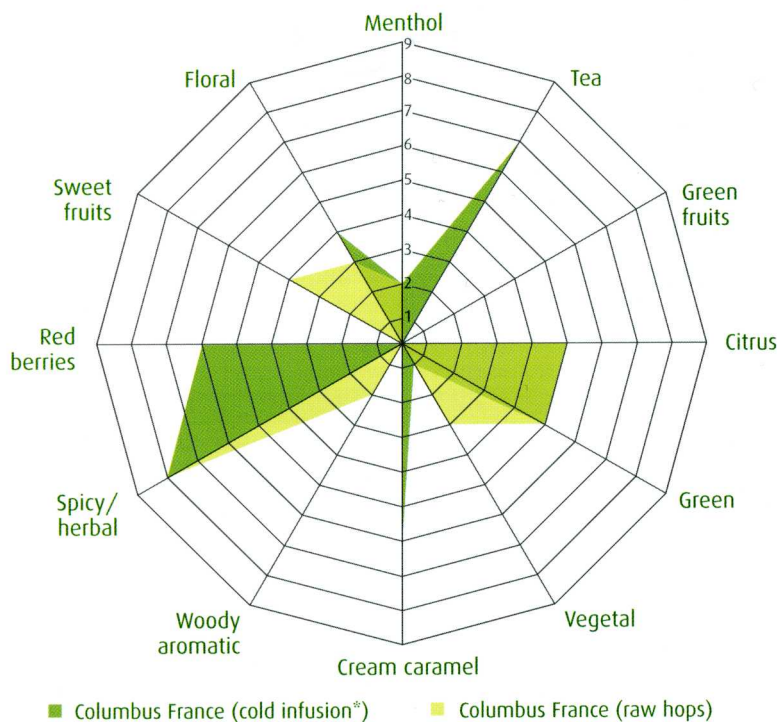
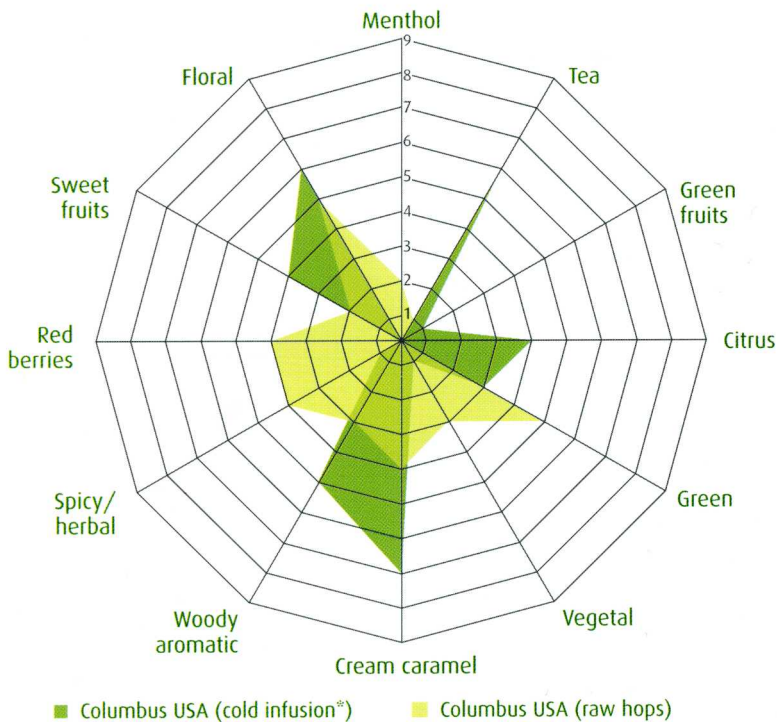
You can formulate your own flavour impressions here:

Columbus



Columbus USA

In the raw hops, the American variant of Columbus is reminiscent of red berries accompanied by floral, green and spicy herbal notes such as curry in a perfect combination with lemon grass, orange peel and tea. Nuances of cream caramel, vanilla and marzipan enhance the spectrum in the cold infusion, complemented by sweet fruits such as apricot and a woody aromatic flavour of pipe tobacco..



Columbus France

In the cold infusion of the French Columbus, tea, spicy lovage, dill, lemon grass and sage along with the vegetal aromas of tomato leaves and fresh cucumber create an ideal combination, accompanied by fruity forest berries. The raw hops display similar components in combination with notes of camomile and watermelon.

Hallertauer Taurus



Taurus was bred at the Hüll research institute and has a very high alpha content.

Analytical values

Type	Bitter
Growing Area	Germany
Lineage	Daughter of Cascade
Alpha acids*	9.0 - 12.0 %
Beta acids	4.5 - 5.5 %
Total Polyphenols	no data
Total oils	1.5 ml/100g
Myrcene	70.5 % of total
Linalool	0.4 % of total

The analytical values are typical for the variety at the time of harvest, but may vary according to crop year, growing region, grower and degree of ageing.

* The alpha content is determined by means of spectrophotometric analysis.

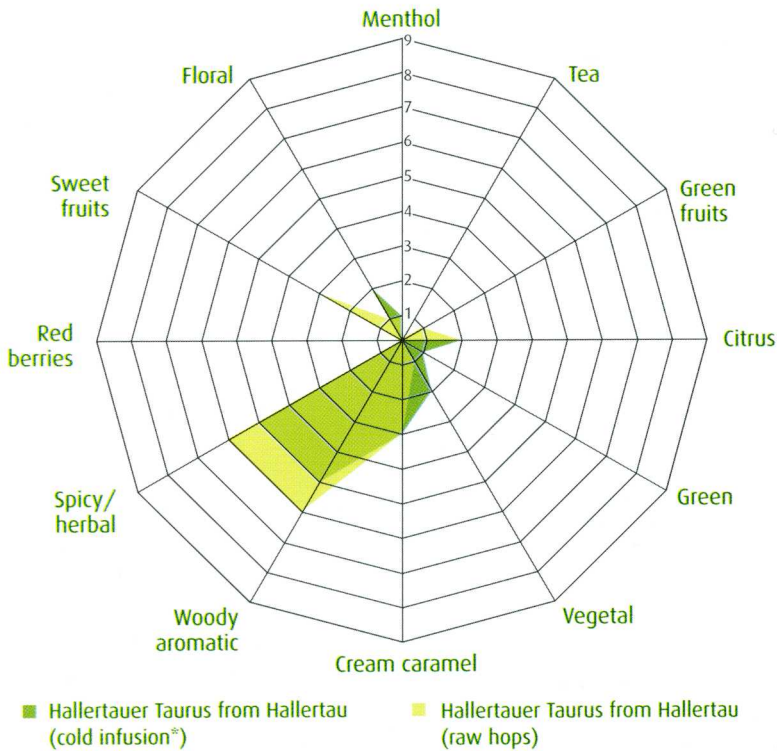
You can formulate your own flavour impressions here:

Hallertauer Taurus



Hallertauer Taurus from Hallertau

The spicy aroma notes, both in the raw hops and in the cold infusion, suggest pepper, curry and freshly chopped wood. Nuances of ripe bananas and plain chocolate add an interesting dimension to the aroma spectrum.



Hallertauer Taurus from Elbe Saale

The spicy aroma notes in the cold infusion of the Taurus from Elbe Saale are reminiscent of bergamot, sulphur and lemon tea with nuances of creamy milk and fruity pear. Creamy vanilla and elements of cocoa and coffee add an interesting dimension to the aroma spectrum in the raw hops. But spicy notes of curry and curcuma also appeal to the palate in this hop variety.

