BarthHaas®

HUMULUS LUPULUS
AND OTHER BITTER TRUTHS

The wonder of hops – same variety but different growing region means different aroma

For ten (!) years now, Humulus lupulus has been making an entertaining, but always informative journey through the incredible world of hops. Regular Humulus lupulus readers will have learned quite a bit about hops in the meantime – from planting and harvesting to crop fluctuations, aroma, bitterness and lots more.

They will also know that hop aroma is influenced by many different factors (for further details see BRAUINDUSTRIE 11/2014) such as:

- Location
- Growing region
- Weather conditions
- Diseases and pests
- Maturing stage
- Harvest conditions
- Storage

So is at least Cascade, for example, always the same Cascade?

What are its aroma characteristics like? How large are any fluctuations, then? Does that mean you can expect a little less lemon, but more lime instead, or are the fluctuations even larger?

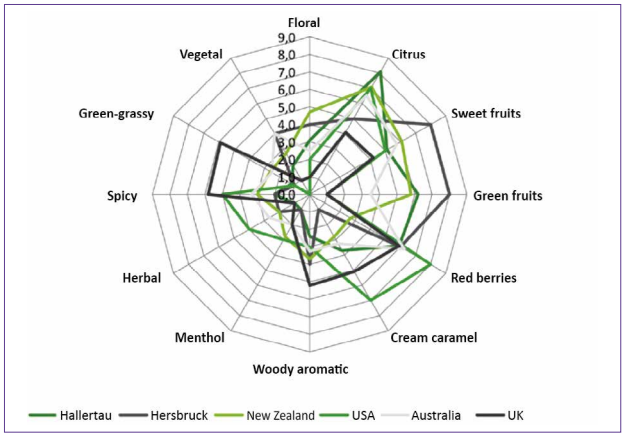
Unfortunately, when it comes to hops, it isn't that simple. We're going to take a closer look at the example of Cascade. The Cascade variety has been around since 1972 and was dragged out of obscurity by American craft brewers. Today, Cascade is the second most widely-grown variety in the USA (see also Barth Report 2017/2018). We're going to compare Cascade cone hops from the following growing regions (data from the Hop Compendium, Vol. 3, 2014):

- Hallertau
- Hersbruck
- USA
- England
- New Zealand
- Australia

So, what were the two most important aroma components in the 2014 crop? From Italian herbs to red berries, citrus fruits and sweet components – they're all there. And that's although it's "only" a matter of different growing regions.

GROWING REGION	HOP AROMA COMPONENT 1	HOP AROMA COMPONENT 2
Hallertau	Grapefruit	Raspberry sauce
Hersbruck	Passion fruit	Quince
USA	Blackberry	Toffee
England	Italian herbs	Cassis
New Zealand	Lemon	Pineapple
Australia	Raspberry	Plum

If you look at the spider chart, you could almost imagine it was describing different hop varieties.



The wonder of hops

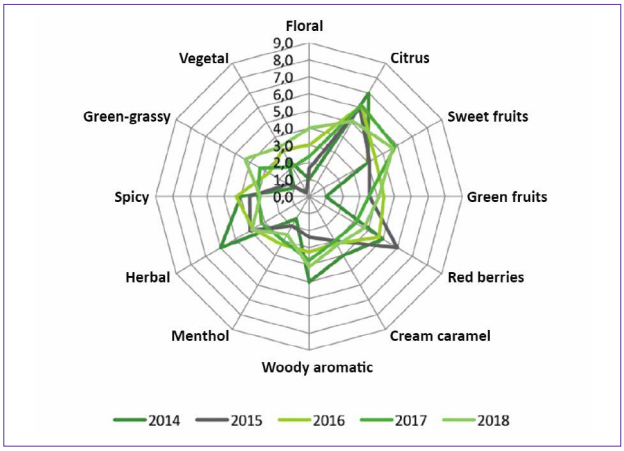
And the crop year? Top or flop?

Of course, there are different climatic conditions and different continents that provide a simple explanation for the differences in aroma characteristics. But is that enough? The crop year also plays a very decisive part.

In the table below you can see the alpha acid content, fluctuating between 5.9 and 7.0 per cent, as well as the two principal aroma components present in the cone hops. These aromas alone show just how different this one hop variety can turn out to be.

	2014	2015	2016	2017	2018
Alpha content	6.40 %	5.90 %	6.88 %	7.80 %	7.00 %
Hop aroma component 1	Lime	Blackberry	Lemon	Grapefruit	Passion fruit
Hop aroma component 2	Thyme	Grapefruit	Curry	Passion fruit	Lime

If you take another look at the spider chart you can see that crop year 2014 is a complete outlier in terms of the hops' aroma characteristics. All of a sudden there are strong herbal elements, fewer red berry notes and a perceptibly fresh lime fragrance.



All these data serve to show that the hop is a natural product. Whereas with wine it is well established that each new vintage and its aromas are awaited with great anticipation and the differences in terroir are emphasised, with hops it is often important that they always smell and taste the same. This undoubtedly has historical reasons regarding how, why and at what point hops are added – both for bitterness and for microbiological stability. Today, however, hops are used in a greater variety of ways and their aroma is becoming increasingly important. In that case it's good to know how hops differ aromatically from one crop year to another, for then they can always be employed skilfully.

The data shown are taken from the Hop Harvest Guides for crop years 2014 to 2018. Download from: https://www.barthhaasgroup.com/de/mediathek/ downloads?medium__downloads=SORTENJAHRGANGS-FUEHRER&cck=media_center__downloads&search=media_center__downloads&task=search

First published in Brauindustrie, January 2019 (in German)