

JUNE 2018

# HOP SCIENCE

KNOWLEDGE FOR YOUR SUCCESS

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## MORE NEW MEMBERS IN THE HOPS FAMILY

The German Hop Research Team in Huell is introducing two more hop varieties to the world. Although there is a demand for new and exciting flavors from brewers, it is also important to breed successors of established noble varieties that exhibit more “growerfriendly” behaviour with better resistances and higher yield. These two varieties 89/25 and 96/24 possess agronomic strength and were bred from saaz relatives. They both show relevant noble aroma characters but have higher oil contents compared to their ancestors of about 1.7 ml/100gr. Are you interested in meeting them? Let me know!<sup>1</sup>

## RESIDUES OF HOP PESTICIDES IN BEER

Hops have to be treated with pesticides, otherwise a supply of sufficient quantity and quality is unrealistic. Also the development in detection methods has led to increasingly low detection limits. Together with the Team of HVG we looked into the transfer rates of hop pesticides from hops into beer with different hopping loads. Pesticides show a wide range from zero to good solubility in beer with transfer rates from hops to beer ranging from 10% to 82%. These levels were found in kettle hopped and dry hopped beers, meaning that there is no significant reduction of pesticides from wort to beer. The Federal Institute for Risk Assessment (BfR) sets maximum residue levels (MRLs) and confirms that there is no danger for consumers.<sup>2</sup>

## WHATEVER IRON MALT BRINGS IN – HOPS CAN FIX IT!

This German Research Team discovered a couple of years ago that hops act as a chelator for iron, and this can help to improve oxidative stability. Their most recent work investigates hops capability of reducing iron in the brewing process from different special malt types. The results of their study indicate that this only works for a certain amount of accessible iron.<sup>3</sup>

## RETHINKING THE WHOLE BREWING PROCESS

That is what German Engineers are currently doing (anybody surprised?). A very novel concept is called Omium, working without a lauter tun but four rotary discs that split wort in different fractions for different processes. This involves rethinking the isomerization process, as this system does not work with a conventional boil kettle. Initial results with isomerisation yields were presented in this work. This process has very a good chance to overcome the inherent isomerization inefficiencies of regular brewhouses.<sup>4</sup>

### REFERENCES:

1. Gahr, A; Characteristics of two New Huell Hop Varieties, lecture at 13th Trends in Brewing, April 2018, Ghent, <http://trendsinbrewing.org/program.html>
2. Forster, A.; Kugel, R; Transfer of pesticides from hops into beer P.3.11 at 13th Trends in Brewing, April 2018, Ghent, <http://trendsinbrewing.org/program.html>
3. Orłowski, S et al; Adjusted Hops Dosage to reduce Iron entry, P.7.13 at 13th Trends in Brewing, April 2018, Ghent, <http://trendsinbrewing.org/program.html>
4. Bastgen, N.; A Novel Brewhouse Concept – how to improve the brewing process and quality by treating wort fractions, P 7.18 at 13th Trends in Brewing, April 2018, Ghent, <http://trendsinbrewing.org/program.html>

### Extension of deadline:



Every year we at the Barth-Haas Group encourage students and researchers to investigate the

science and application of hops. As such, we offer six grants, each at 2000€ to support these innovative research ideas and efforts. To apply, please send a one-page description of your research ideas to me, [Christina.schoenberger@johbarth.de](mailto:Christina.schoenberger@johbarth.de) by July 15th.

### Hops Academy

## BARTH-HAAS HOPS ACADEMY

Hop Flavourist Course Level 1 2/3rd of July in Nuremberg (English/German) [https://www.barthhaasgroup.com/images/pdfs/date\\_infos\\_hops\\_academy/17-3436infopdflevel1en.pdf](https://www.barthhaasgroup.com/images/pdfs/date_infos_hops_academy/17-3436infopdflevel1en.pdf)

### 10/11th of October in Nuremberg (German)

[https://www.barthhaasgroup.com/images/pdfs/date\\_infos\\_hops\\_academy/hopsacademyhopflavorist10-2018.pdf](https://www.barthhaasgroup.com/images/pdfs/date_infos_hops_academy/hopsacademyhopflavorist10-2018.pdf)