CO-MULTIFIDOL GLUCOSIDE IN DRY-HOPPED BEERS

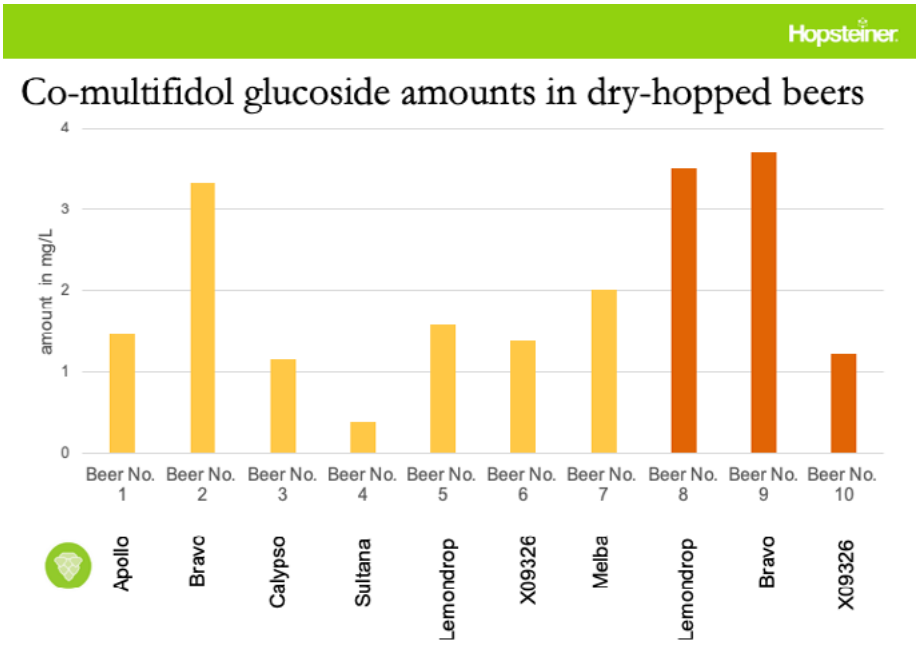
| TECHNICAL SUPPORT |

New insights about multifidol glucosides from hops and their contribution to the bitter profile of beer were introduced and discussed in literature recently. These compounds are intermediate products of the biosynthesis of α- and β-acids and have the same (acyl) side chains. The amount in hops is about 0.5 %. Anti-inflammatory activities were described for multifidol glucosides.

Reliable structure identification and quantitation of this compound require the use of an HPLC-MS/MS technique. Therefore, an in-house method was developed. More detailed description of this method is given in the hop special issue of the journal BrewingScience in 2017 (https://doi.org/10.23763/BrSc17-20schmidt).

Dry-hopped beers produced with different hop varieties (Apollo, Bravo, Calypso, Sultana, Lemondrop, Melba, X09326) were monitored for co-multifidol glucoside. In total, 7 Lager beers dry-hopped with 500 g/hl (Beers No. 1-5) and with 250 g/hl (Beers No. 6-7) as well as 3 Pale Ale beers, two of them dry-hopped with 500 g/hl (Beers No. 8-9) and one Pale Ale dry-hopped with 250 g/hl (Beer No. 10), were tested. The results are shown in the figure below.

All tested beers contain the glucopyranoside co-multifidol glucoside. The detected concentrations of co-multifidol glucoside are between 0.38 (Beer No. 4) and 3.7 mg/L (Beer No. 9). The bitter flavour threshold for co-multifidol glucoside of 1.8 mg/L is known from literature [1]. The amount of this bitter compound exceeds the flavour threshold in 4 of 10 beers presented here. For that reason, the contribution of co-multifidol glucoside to the overall bitter profiles of these dry-hopped beers can be expected.



[1] Dresel, M., Dunkel, A. and Hofmann, T.: Sensomics analysis of key bitter compounds in the hard resin of hops (Humulus lupulus L.) and their contribution to the bitter profile of Pilsner-type beer. J. Agric. Food Chem. 2015, 63, 3402-3418.

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FEB., 6TH - 7TH
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FEB., 10TH
17. Rohstoffseminar Weihenstephan

FEB., 11TH - 13ST
53. Technologisches Seminar Weihenstephan

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