

# NEWSLETTER 02/2013

## TECHNICAL SUPPORT

### Differences between Analytical Methods

The following charts show the average relative differences between lead conductance value "LCV" (EBC 7.5), spectrophotometric method, "Spectro" (ASBC 6A) and high performance liquid chromatography "HPLC" (EBC 7.7 and ASBC 14). The latter is represented as reference value by the blue line. The green (LCV) and the orange bars (Spectro) show the relative difference compared to HPLC. The varieties chosen are typical examples from the German growing region Hallertau. The analyses were carried out within few weeks of harvest and we calculated the average of the last five crop years.

HPLC is a specific method determining the concentration of pure alpha acids. The titration by lead acetate is an unspecific analysis covering alpha acids and other substances, which may contribute to beer bitterness. In the spectrophotometric method the alpha acids are calculated by a formula using empiric factors.

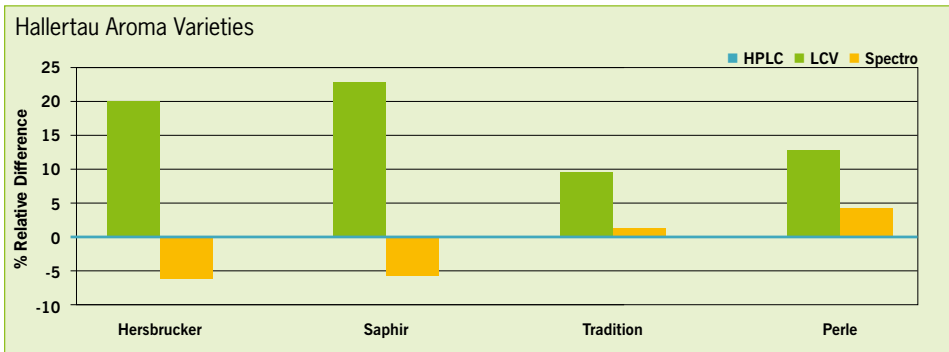


Figure 1: Analytical Differences – Five years average

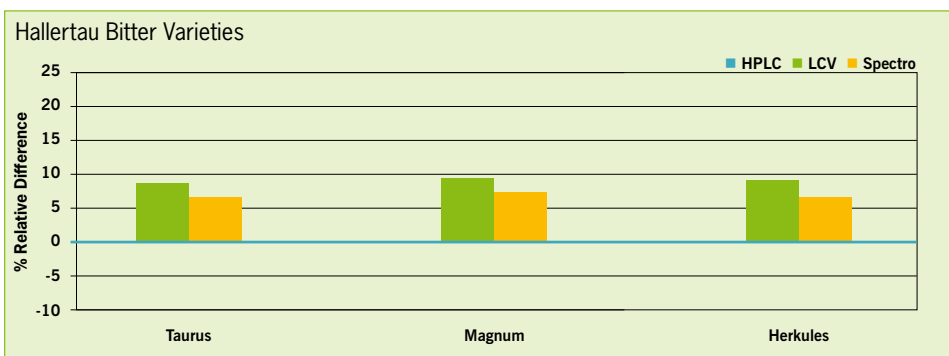


Figure 2: Analytical Differences – Five years average

LCV according to EBC 7.5 is always higher than alpha by HPLC. In practice it is usually used for pellets, as it correlates well with the perceived bitterness in beer. In case of aroma hops it can be more than 20 % higher than HPLC (figure 1). For bitter or high alpha hops the difference is below 10 % (figure 2).

The deviation between Spectro and HPLC depends on the variety and/or on the concentration of alpha. For Hersbrucker and Saphir this method gives lower results than HPLC, which is just the opposite for hops above approximately 5 % alpha.

For further information, please don't hesitate to contact our Technical Support Team!

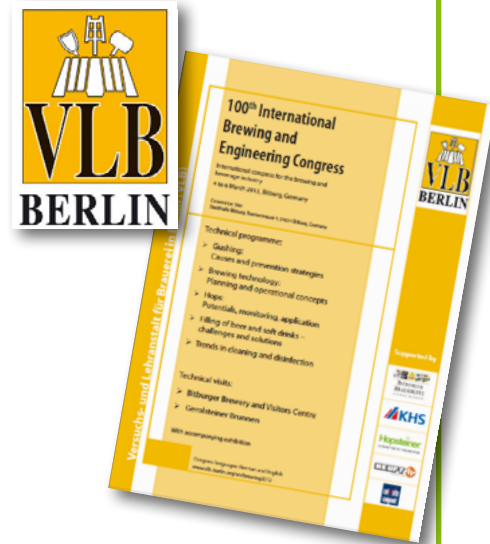
*Simon H. Steiner, Hopfen, GmbH*

Newsletter, February 2013

Meet our team at the

**100<sup>th</sup> International congress for the brewing and beverage industry**

4<sup>th</sup> to 6<sup>th</sup> March 2013, Bitburg, Germany



**HOPSTEINER FORUM**

Notice the dates of the upcoming **"Hopsteiner FORUM"** in 2013:

2<sup>nd</sup> Hopsteiner Forum: May, 8<sup>th</sup>

3<sup>rd</sup> Hopsteiner Forum: June, 19<sup>th</sup>

4<sup>th</sup> Hopsteiner Forum: July, 3<sup>rd</sup>

5<sup>th</sup> Hopsteiner Forum: September, 4<sup>th</sup>

6<sup>th</sup> Hopsteiner Forum: November, 15<sup>th</sup>

Topics are available on our Homepage  
<http://www.hopsteiner.de/forum.html>

We are looking forward to your registration.

[info@hopsteiner.de](mailto:info@hopsteiner.de)

Check out our new service: the Hopsteiner calendar gives regular updates of events dealing with issues relevant to the brewing scene. So you are always up to scratch.

**+++Hopsteiner calendar+++**

  
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