



NEWSLETTER 12/2015

TECHNICAL SUPPORT

Variations in Hop Aroma Depending on Crop Year

As in previous years we would like to demonstrate how the contribution of hop oils to beer can vary from one crop year to another. We have chosen linalool as a representative hop aroma substance as it correlates well with the sensory impression of hoppy aroma in beer.

The concentration of alpha and linalool can vary independently from each other. For example, in a year with higher alphas, linalool concentrations do not necessarily increase proportionally. Consequently we calculate the ratio of linalool (ppm) / alpha acids to assess how much aroma is added without changing the bitterness. This is very significant in the case of late hop addition.

Due to the unfavourable growing conditions this year, components such as alpha acids, hop oil and linalool didn't reach last year's level. However, the 4 shown varieties in the diagram reacted rather differently:

For crop 2015 Saphir has a much lower concentration of total oils, whereas Tradition is similar to last year. However, both varieties have a total amount of linalool which is less than 50 % compared to crop 2014. Regarding the ratio of linalool / alpha acids, Saphir showed almost no difference (Fig.1).

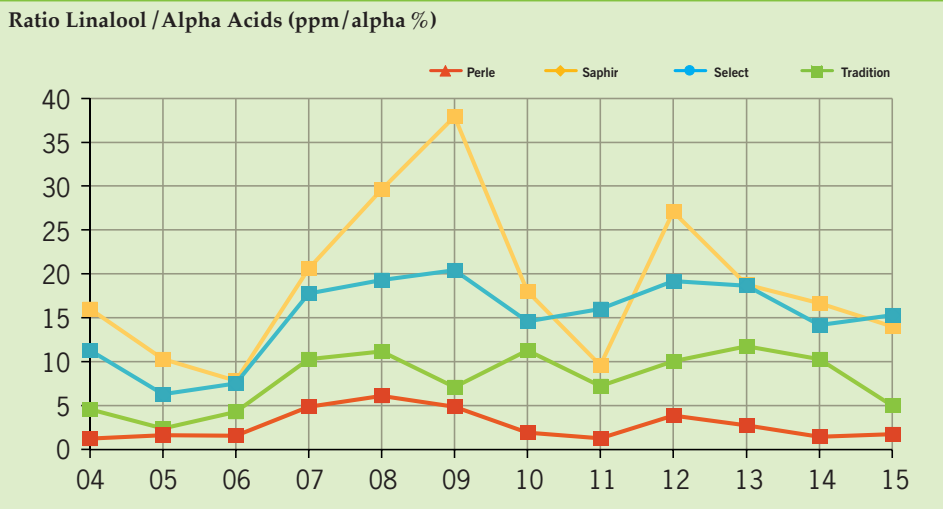


Figure 1: Ratio of Linalool / Alpha Acids (both analyzed according current EBC methods 7.12 and 7.7)

The variety Select behaved like Tradition, with a similar total oil concentration but a lower total amount of linalool itself. For Perle, total oil and linalool were clearly lower in crop 2015. This generally means that the input of linalool will be much lower from this year's crop.

For Perle, Select and Saphir the alpha acids are also clearly lower compared to last year and consequently the ratio of linalool to alpha acids is not really affected (see Fig.1). This is different to the variety Tradition, where the loss of bitter acids was not as high and therefore the ratio decreased clearly.

Please contact our technical team in case you need information for other varieties as well!

Simon H. Steiner, Hopfen, GmbH S. S. Steiner, Inc.

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NEW!

CHECK OUT THE NEW VARIETIES FROM THE HOPSTEINER® BREEDING PROGRAMME

Classification: Aroma
Alpha Acid: 5.0 - 7.0 %
Beta Acid: 4.0 - 6.0 %
Total Oils: 1.5 - 2.0 ml/100 g
Aroma Specifications: Lemon, Mint, Green Tea, Melon



Lemondrop™

Classification: Aroma
Alpha Acid: 5.5 - 7.0 %
Beta Acid: 5.5 - 7.0 %
Total Oils: 0.5 - 1.1 ml/100 g
Aroma Specifications: Spicy, Earthy, Ginger, Citrusy




DELTA™

Classification: Dual Purpose
Alpha Acid: 12.0 - 14.0 %
Beta Acid: 5.0 - 6.0 %
Total Oils: 1.6 - 2.5 ml/100 g
Aroma Specifications: Pear, Apple, Tropical Fruits, Mint



CALYPSO™

Classification: High Alpha
Alpha Acid: 15.0 - 19.0 %
Beta Acid: 5.5 - 8.0 %
Total Oils: 0.8 - 2.5 ml/100 g
Aroma Specifications: Lime, Grapefruit, Pine



APOLLO™