

# High Molecular Weight $\beta$ -Glucan Content: Fluorimetric Method

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of the European Brewery Convention

## INTRODUCTION

Analytica-EBC contains in section 3 "Barley", section 4 "Malt", section 8 "Wort" and section 9 "Beer" the Fluorimetric Method of High Molecular Weight  $\beta$ -Glucan Content.

Several collaborative trials in the last years showed unacceptable reproducibility values (R). The reason was the use of different  $\beta$ -glucan standards and different Calcofluor reagents. After some basic studies and tests this method has been now specified with respect to  $\beta$ -glucan standard and Calcofluor reagent, both available from Scandinavian Brewery Laboratory PLC (Catalogue No SBL R#01 for the first one and Catalogue No SBL R#05 or SBL R#04 for Calcofluor. e-mail: sbl@ajl.dk, website: www.ajl.dk).

A further source of deviating results is the dilution. The determination is linear only up to about 300 mg/L. Dilution of the final extract affects the result. If the  $\beta$ -glucan content in the final extract exceeds 300 mg/L, a new extraction with smaller amount of barley or malt flour has to be made. In case of malt wort, wort or beer the result is reported only ">300 mg/L".

## COLLABORATIVE TEST

A collaborative trial on the congress wort of the 15th EBC standard malt according to this revised procedure and analysed without dilution by 9 participants gave the following precision values:

$$m = 289 \text{ mg/L}; r_{95} = 11, R_{95} = 41.$$

m = mean value.

Six laboratories analysed the total  $\beta$ -glucan (% m/m):  
m = 0.60 %,  $r_{95} = 0.05$ ,  $R_{95} = 0.18$ .

These figures should only be considered as an indicator because of the small number of participants.

The statistical treatment of the data was performed according to ISO 5725.

## CONCLUSION

Repeatability limit ( $r_{95}$ ) and reproducibility limit ( $R_{95}$ ) figures are now acceptable. The revised method will be published in Analytica-EBC.