English Micromalting Group (EMMG)

Experimental Procedure for Barley and Malt Samples

Analytica-EBC Recommended Methods
These methods (quoted in brackets after each analysis)

1. Barley Analysis

1. Distribution to collaborators is usually in December/ January.
2. When received, a sample of each batch of barley should first be analysed for corn size distribution, using a barley grader (Glasblaserei), having slotted sieves of 2.8mm, 2.5mm and 2.2 mm.

Please record the results as:

Corns >2.8mm (%) = weight of grain retained on 2.8 mm sieve
Corns <2.5mm (%) = weight of all grain that passes through 2.5mm sieve (i.e. includes that which will also pass through 2.2 mm)
Corns <2.2mm (%) = weight of all grain that passes through 2.2mm sieve

3. The complete sample should then be dressed over the 2.2mm sieve and all barley <2.2mm discarded. A visual examination of the screened barley should also be recorded (splits, loose husk, lost embryos, mould etc). N.B. Where possible barleys should be stored at 20°C prior to malting.
4. Barley should be analysed for:

Moisture (3.2), Thousand Corn Weight (), Germinative Capacity (),

Germinative Energy and Water Sensitivity () and Total Nitrogen (3.3.2 Dumas).

N.B. All germination plate tests to be made just prior to malting and recorded as cumulative counts at 72h.

2. Micromalting

1. Steeping.

The grain should be steeped to moisture content of 44 - 46%, measured 24h from casting. **A two or three steep regime should be used** to achieve this moisture and temperature may be in the range 12 - 20^{o}C. Up to 48h is allowed for steeping. Sufficient grain should be steeped to allow full malt analysis to be carried out.

2. Germination

A nominal 96h is to be employed and no processing aids used.
Total wet processing time (i.e. steep time + germination time) is not to exceed 144h.

The normal temperature for the particular Micromalting system should be used.

Both cast moisture (24h after steeping) and kiln load moisture should be recorded.

3. Kilning

The malt should be dried to 4 - 5% moisture at a maximum temperature of 65^{o}C.

3. Malt Analysis

Each collaborator should then carry out analysis by IOB MASH for:

(i) HWE_7 (4.6)

(iii) Colour (4.7.2)

(iv) DP (4.12)

(v) DU (4.13)

(vi) TN (4.3.2 Dumas)

(vii) TSN (4.9.3 Dumas)

(viii) SNR

(ix) FAN (4.10)

(x) Wort viscosity (4.8)

(xi) Fermentability **ON BOILED WORT** **(4.11)**

(xii) Friability/Homogeneity (4.15)

(xiii) Wort β-glucan (4.16.2)

(xiv) Glassy corns

(Results should be reported on the basis of 450g mash where applicable.)

4. Expression of IOB Results

Please express malt analyses as follows:

Moisure (%)	To one decimal place
HWE_7 (litre^{o}kg^{-1})	DRY to nearest whole number
Colour (EBC)	To one decimal place
TSN (%)	DRY to two decimal places
TN (%)	DRY to two decimal places
SNR (%)	To nearest whole number
FAN (mg l$^{-1)}$	AS IS to nearest whole number
Fermentability (%)	REAL to nearest whole number
Viscosity (mPa.s)	To two decimal places
Friability (%)	To nearest whole numer
Homogeneity (%)	To nearest whole number
DP (^{o}IOB)	AS IS to nearest whole number
DU (-)	DRY to nearest whole number
B- Glucan (mg l^{-1})	AS IS to nearest whole number
Glassy corns (%)	To one decimal place