

# Malt Analyzer

Optimize your production with the new Malt Analyzer –in seconds

The MaltAnalyzer 3 is a very small unit with a foot print of only 250 x 250 mm. It fits in any laboratory and you only need to connect it with the supplied 24 VDC and to your pc with a USB2/USB3 port. The analysis is made by the Malt Modification program.

The program calculates the modification and the homogeneity in a few seconds, and you are ready for the next sample.

Every Measurement details are saved in a folder on your pc.



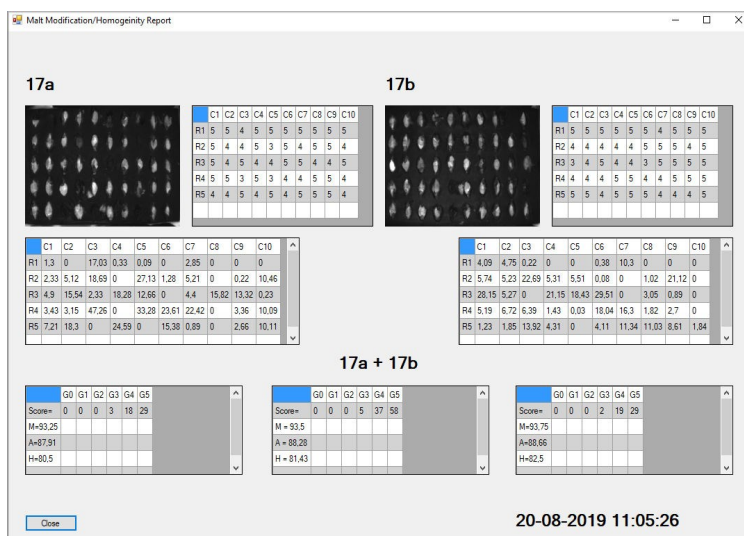
A common method of measuring modification in base malt is the Middle European Analyzing Commission for Brewing Technologies/European Brewery Convention (MEBAK/EBC) Calcofluor-Carlsberg method. This analysis relies on the progressive breakdown of beta glucan-rich endosperm cells as a correlated marker for modification. It involves taking kernel samples from a base malt batch after kilning. The sample kernels are then cut longitudinally in half and stained with a fluorochrome solution (calcofluor), which binds with beta glucans and a green dye (called Fast Green FCF) to mask nonspecific fluorescence.



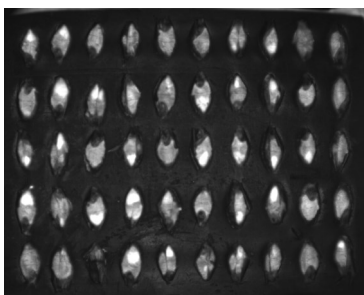
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When the stained kernels are inspected under ultraviolet light, the unmodified cells appear fluorescent bright blue, whereas the modified cells appear a dull blue. Each kernel in the sample is then assessed as to its percentage content of modified cells. Next, the kernels are counted in six categories of increasing modification percentages (0% to 5%; 5% to 25%; 25% to 50%; 50% to 75%; and 75% to 100%). These data are then used to compute an aggregate modification index, expressed as a percentage value, for the entire batch from which the sample was taken. The brewer will look for a modification level that suits the beer being made and the brewing technique employed. Single-temperature infusion mashes tend to require malts with high modification percentages.



The results table shows the 2 calculated samples and the average is shown in the table



The system is self-calibrating, when a standard brick is placed with known modification and homogeneity.

See how Maltanalyzer works on this Youtube link

[MaltAnalyzer videos](#)

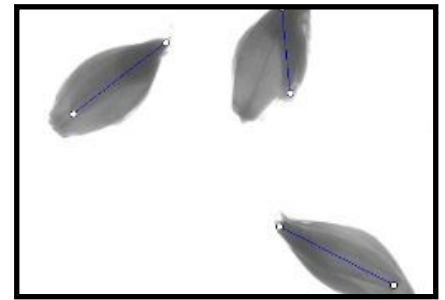


# Acro-spire analysis

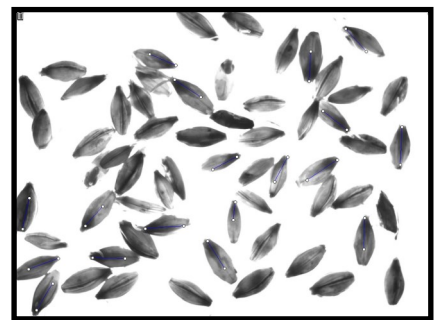
THE ACRO-SPIRE MODULE ONLY TAKES A FEW MINUTES  
TO INSTALL IN THE STANDARD MALTANALYZER

Acro-spire analysis is an optional analysis for the standard Maltanalyzer.

Acro-spire is the sprout of a grain seed, the beginning of a new plant. As the acro-spire grows, enzymes in the grain become active. This process is called “modification” and involves the alteration of the molecular structure of the kernel material, which consists mostly of complex proteins, carbohydrates (starches), glucans (cellulose), and lipids (fats). In the malt house, this process is imitated through the steeping of the grain at the beginning of the malting process and its subsequent germination in an air-, moisture-, and temperature-controlled box. The size of the acro-spire, therefore, is a good visual indicator of the progress of modification. If germination continued, all the nutrients the brewer tries to preserve for beer-making would be used up by the plant for its own development. The maltster, therefore, interrupts germination when the acrospire is about 75%–100% of the length of the kernel. At this point, there is just the right balance between the resources converted by the enzymes and the resources consumed by the acro-spire. With the Acro-spire-Analyzer you can measure the acrospire length in percentage of the grain size. After analysis you have the acro-spire distribution to assess when to stop the germination. Typically 100 seeds are extracted for analysis. The seeds are boiled 4-5 minutes before placed on a backlighted plate below the camera.



From the images taken, the operator marks the acro-spire with the mouse.

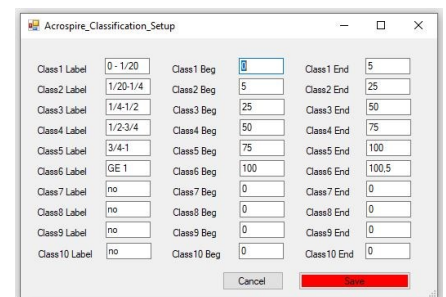


The measured acro-spires are counted according to the classification setup

See how acro-spire analyzer works in these Youtube videos

[MaltAnalyzer videos](#)

- **Very small footprint 250 x 250 mm**
- **Easy to operate**
- **Windows 10 compatible**
- **Long life LED UV light**
- **Precise sample loading**
- **Fast result –within seconds**
- **USB 2/USB 3 interface**



| Class Label             | Class Beg | Class End |
|-------------------------|-----------|-----------|
| Class1 Label 0 - 1/20   | 0         | 5         |
| Class2 Label 1/20 - 1/4 | 5         | 25        |
| Class3 Label 1/4 - 1/2  | 25        | 50        |
| Class4 Label 1/2 - 3/4  | 50        | 75        |
| Class5 Label 3/4 - 1    | 75        | 100       |
| Class6 Label GE 1       | 100       | 100.5     |
| Class7 Label no         | 0         | 0         |
| Class8 Label no         | 0         | 0         |
| Class9 Label no         | 0         | 0         |
| Class10 Label no        | 0         | 0         |

The acro-spire classification setup can use up to 10 classification percentage ranges.