



Brewers QCheck™ Kit Manual



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1. Simple and reliable microbiological quality control

One of the main tasks in breweries is conducting microbiological beer fermentation in a clean and hygienic way. However, beer spoiling microorganisms can inhibit fermentation or have a negative impact on the beer's flavours. Therefore, microbiological control of the beer brewing processes is extremely important and critical.

The Brewers QCheck™ Kit makes it possible to perform microbiological control on all samples of the brewing process in a simple, fast and comprehensive way. Different raw materials used for the brewing process, such as water and yeast, can be analysed for microbiological contamination before fermentation. Beer spoiling bacteria can be detected in the end product, i.e. the beer, and the hygiene of the surrounding area, for example within the production site and dispensing unit, can be accurately monitored.

All microbiological detection is easily and reliably visible through a colour change, even without any previous knowledge. Consequently, the Brewers QCheck™ Kit allows the entire beer brewing process to be microbiologically controlled, thus providing the perfect introduction to microbiological quality control.

10.2. NBB[®]-B: Yeast and beer analysis

For yeast and cloudy beer, it is possible to use the swabs provided and a sterile serological pipette (not available with the kit) for sampling. For clear beer samples, please use the serological pipette.



10.2.1. NBB[®]-B sampling

Yeast:

Remove 0.5 - 1 ml of yeast from the yeast culture using a sterile serological pipette.

Alternative: It is possible to extract thick, viscous yeast using the sterile swab provided.

Beer:

Remove a beer sample (approx. 50 ml, see Useful tip: beer samples) under sterile conditions and transfer this to a sterile sample flask.

A) Sampling with a pipette

Remove 0.5 - 1 ml of (green) beer in the sterile sample flask with the beer sample (50 ml) or alternatively from a bottle of beer, using a sterile serological pipette.

B) Sampling with a swab:

Leave the beer sample (50 ml) or beer bottle for 24 hours at 4°C to enable the formation of sediment at the bottom. Decant the liquid. Remove a sample from the sediment using a sterile swab.

Useful tip: beer samples

The majority of samples are taken from a tank using a sampling tap, or are alternatively taken from a barrel using a fitting. When carrying out this procedure, it is important that the sampling tap is decontaminated by using alcohol solution or a Bunsen burner. Valves/ fittings can be immersed in a suitable disinfectant beforehand. As it is not uncommon for severe contaminations to be found in the areas of the sampling tap, it is important to leave the beer running for a short while (approx. 1 second). Then take a sample.



10.2.2. NBB[®]-B sample combination with culture medium

Yeast:

Transfer the yeast sample into an NBB[®]-B Tube.

Pass the tube through the flame and seal it.

Alternative: Insert the swab into the NBB[®]-B Tube.

Break off the upper part of the wooden shaft, flame the tube and seal it.

Beer:

A) Sampling with a pipette

Fill an NBB[®]-B Tube with 0.5 - 1 ml of the beer sample.

Flame the NBB[®]-B Tube and seal it.

B) Sampling with a swab:

Insert the sterile swab with the yeast sediment into an NBB[®]-B Tube.

Break off the upper part of the wooden shaft and seal the tube.



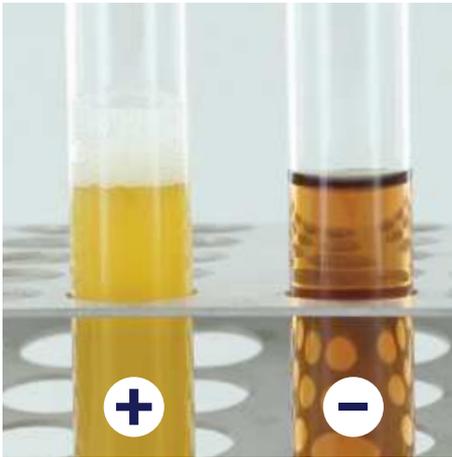
10.2.3. NBB[®]-B incubation

Yeast:

Incubate the sealed NBB[®]-B Tube at $28 \pm 2^{\circ}\text{C}$ for 5 days.

Beer:

Incubate the sealed NBB[®]-B Tube at $28 \pm 2^{\circ}\text{C}$ for 5 days.



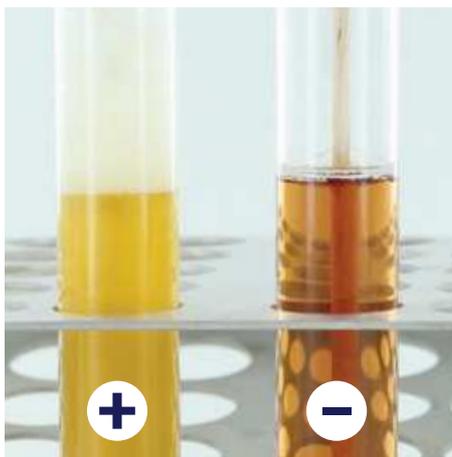
10.2.4. NBB[®]-B results analysis for yeast and beer

Once incubation is complete, the NBB[®]-B Tube colour will change from red to yellow if beverage spoiling microorganisms have been positively detected. The solution will also appear cloudy and gas formation may be observed in some cases.

Result: The yeast is contaminated with beer spoiling microorganisms and should not be used in the brewing process.

The beer is contaminated with beer spoiling microorganisms and should not be bottled or delivered.

If possible, repeat the experiments to confirm the results. If the beer is contaminated, it is necessary to carry out further analyses in order to determine its potential risk.



10.2.5. NBB[®]-B results analysis for the yeast / beer swabs

Once incubation is complete, the NBB[®]-B Tube colour will change from red to yellow if beverage spoiling microorganisms have been positively detected. The solution will also appear cloudy and gas formation may be observed in some cases.

Result: The yeast is contaminated with beer spoiling microorganisms and should not be used in the brewing process.

The beer is contaminated with beer spoiling microorganisms and should not be bottled or delivered.

If possible, repeat the experiments once again to confirm the result. If the beer is contaminated, it is necessary to carry out further analyses in order to determine its potential risk.