



ASBC Method Highlight: Yeast-6. Yeast Viability by Slide Culture

In order to ensure efficient and complete fermentations, regular checks of yeast health should be considered a critical portion of any strong brewing quality program. Viability is arguably the simplest measure of yeast health, and while a variety of methods are available for performing this assay, the accuracy of data obtained varies by method. Utilizing a vital stain like Methylene Blue or Methylene Violet has the advantage of being a relatively quick and simple test, but it can provide inaccurate data for samples with severely compromised viability. While it is certainly a more time- and labor-intensive test, the slide culture method provides a more accurate measure of yeast viability by not just determining live vs. dead cells, but rather assessing the ability of a cell to grow and divide as a measure of viability. The slide culture method is a valuable addition to the brewing microbiologist's arsenal when utilized alone as a regular check of harvested yeast health or in combination with the more common vital staining methods. [Microbiology Yeast-6: Yeast Viability by Slide Culture](#) includes clear direction on making the required culture media, preparing and inoculating the slide, and determining the viability of the culture via a handy built-in calculator (just click on the calculator icon!).

Advantages to Slide Culture Method

Vital staining methods can show variability in the hue of a dead cell (dead cells stained with methylene violet can range from faint pink to dark purple), which can result in increased operator variability. Some technicians may count only dark purple cells as dead, whereas others may count everything with any degree of color. Microcolonies created by live cells during the slide culture method are very easily distinguishable from the single cells counted as dead, and thus the data obtained is less subject to operator variability.

Vital stains are often time sensitive, as cells kept in the presence of certain dyes for extended periods will begin to deteriorate and result in elevated dead counts as more cells take up the stain. The slide culture method is not subject to this timing pressure.

Disadvantages to Slide Culture Method

The slide culture method does require the use of a specific media that is designed to achieve the highest amount of viable cells. UBA or other more general brewery media may negatively affect the quality of results due to the absence of additional maltose and zinc, so be sure to use only the media outlined in the ASBC method.

While vital staining can be done in a very short amount of time, the slide culture method does require an incubation period of 12–18 hours, after which point the microcolonies are large enough to distinguish. For situations where an immediate value is needed, performing a vital stain is generally the preferred approach.