



Pitching the right amount of yeast is key to reliable fermentations and great tasting beer every time.

Cell counting yeast helps determine the current condition of the culture and the correct amount of live yeast needed, resulting in more consistent fermentations.

Cell counting can be done in as little as 10-15 minutes but can save you time and money by preventing fermentation issues and unexpected tank times.

1 SAMPLE PREP TIPS

Completely mix your yeast slurry before taking a sample. Use a vortex or gently invert to help fully mix a yeast sample. Improper sample collection can lead to inaccurate results.

Dilute yeast slurry to a working cell concentration to allow for viewing of individual cells that can be counted under the microscope.

Typically, yeast slurries require a serial dilution of at least 1:100, while yeast fermenting in beer may only need a 1:10 dilution. This does not include for dilutions with viability stains.

1:10 DILUTION



1/10 Yeast
9/10 Water

1:100 DILUTION

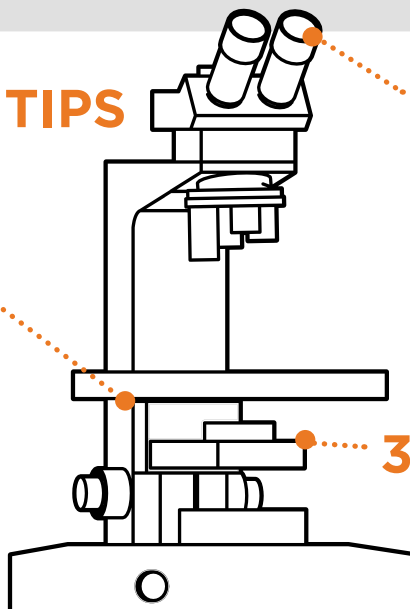


1/10 Yeast Slurry from **A**
9/10 Water

2 MICROSCOPE TIPS

Hard to see? Try these 3 quick adjustments for a better view.

1. Changing the light aperture can help the brightness of what is seen through the lens. Too bright, and the cells are washed out. Too dark, and cells are not viewable.



2. Microscope lenses can be cleaned with Kimwipes and isopropyl alcohol. Oil from gram staining can blur focus. Be sure to properly clean your microscope lenses routinely.

Try to avoid standard cleaning papers, like paper towels or tissue, as these can scratch the lens.

3. Move the diaphragm/condenser of the light up and down the microscope stage.

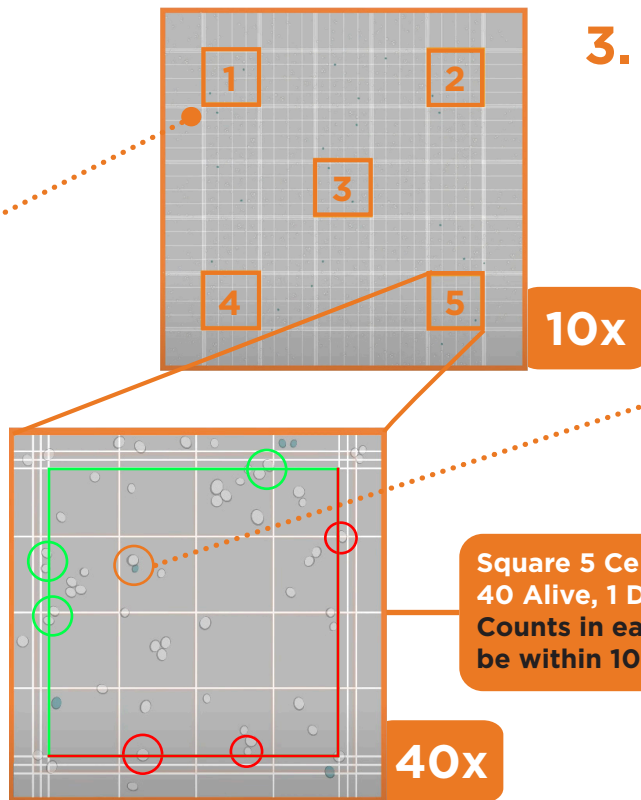


YEAST CELL COUNTING

3 COUNTING ON THE GRID

Use a consistent method for counting for the most accuracy

1. Perform counts on the 5 of the 25 squares. We recommend the 4 corners and middle square.
2. Count cells inside the square and ones touching only 2 sides of the square for all 5 countable squares.
EX. Count cells touching the top and left lines (**green**). Exclude cells touching the bottom and right lines (**red**).



3. **A.** Any budding cell 1/2 the size of the mother cell or larger can be counted as alive even if stained blue.

B. Any budding cell smaller than 1/2 the size of the mother cell or smaller will not be counted as alive or dead since this smaller cell is still in its growth phase.

Square 5 Cell Count: 40 Alive, 1 Dead. Counts in each square should be within 10% of each other.

4 VIABILITY TIPS

Live Cells

Total Cells Counted

$$\frac{\text{\# Live Cells}}{\text{Total Cells Counted}} \times 100 = \% \text{ Viability}$$

We typically recommend 85% viability or higher when repitching. Lower viability % may work but have a higher risk of stuck fermentations and adding autolyzed off-flavors.

Want to know the viability in a pouch?

With years of research, our estimated viability calculator gives an accurate estimate of our yeast viability based on our QC release date. Try it today!
yeastman.com/info

5 CALCULATION TIPS

To get the total number of the entire 5x5 grid

Represents the volume in the hemocytometer chamber

$$\text{\# Live Cells} \times 5 \times 200 \times 10,000 = \text{Billions Cells/mL}$$

From the total of 5 squares counted

Dilution Factor from dilution of 1:200 or use your dilution factor if different. Be sure to include any dilutions that are made with viability stains.

Concentration of Yeast Slurry