MURPHY & SON

Quality, Consistency & Support

Yeast Count & Viability

Improved Neubauer Haemocytometer

- Using the 1ml Pasteur pipette, measure out 1ml of the beer sample into the Sterilin bottle
- Using another Pasteur pipette measure out 1ml of the Methylene Blue solution and mix with the 1ml of beer sample
- Shake for 20 seconds
- Take the haemocytometer out of its case and breathe on the top surface to create condensation
- Firmly press the cover slip down onto the condensation to ensure a good seal is made
- Using the original pipette (the one used for transferring the beer), transfer some of the now mixed beer and MB solution onto the haemocytometer slide
- Just touch the edge of the Pasteur pipette against the cover slip
- Allow the fluid to seep under the cover slip by capillary action
- Place the slide under the microscope and ensure that the correct lens is chosen (x40)
- Once focused you should be able to find the grid shown:

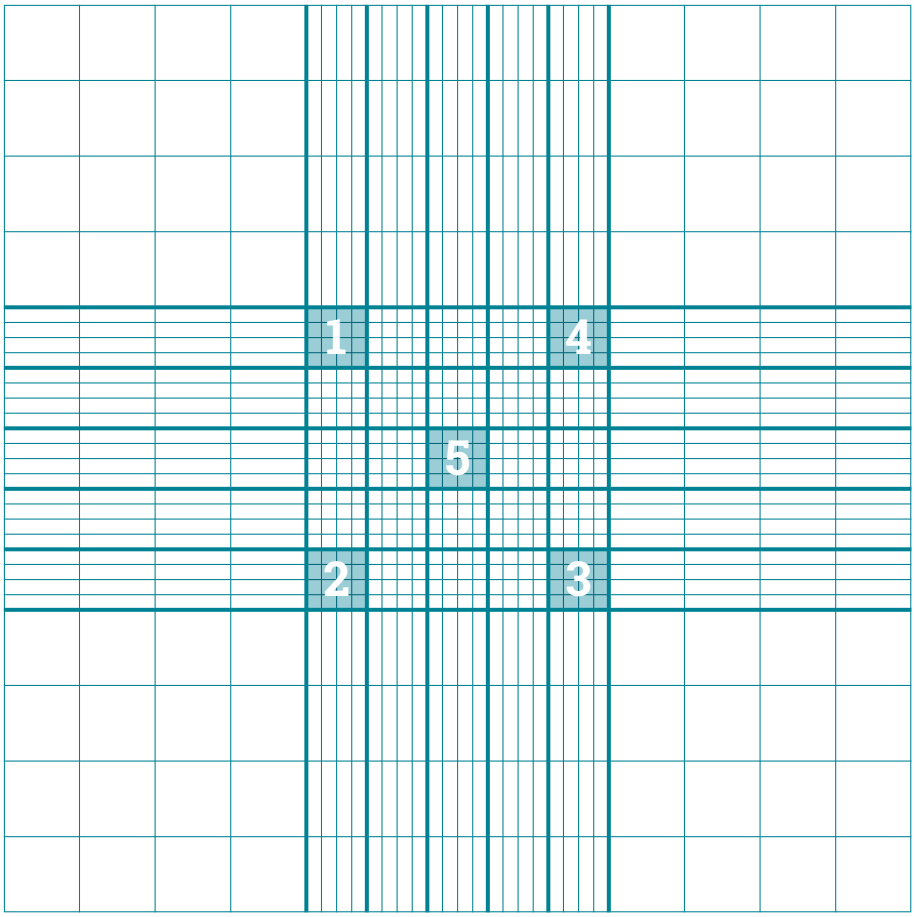
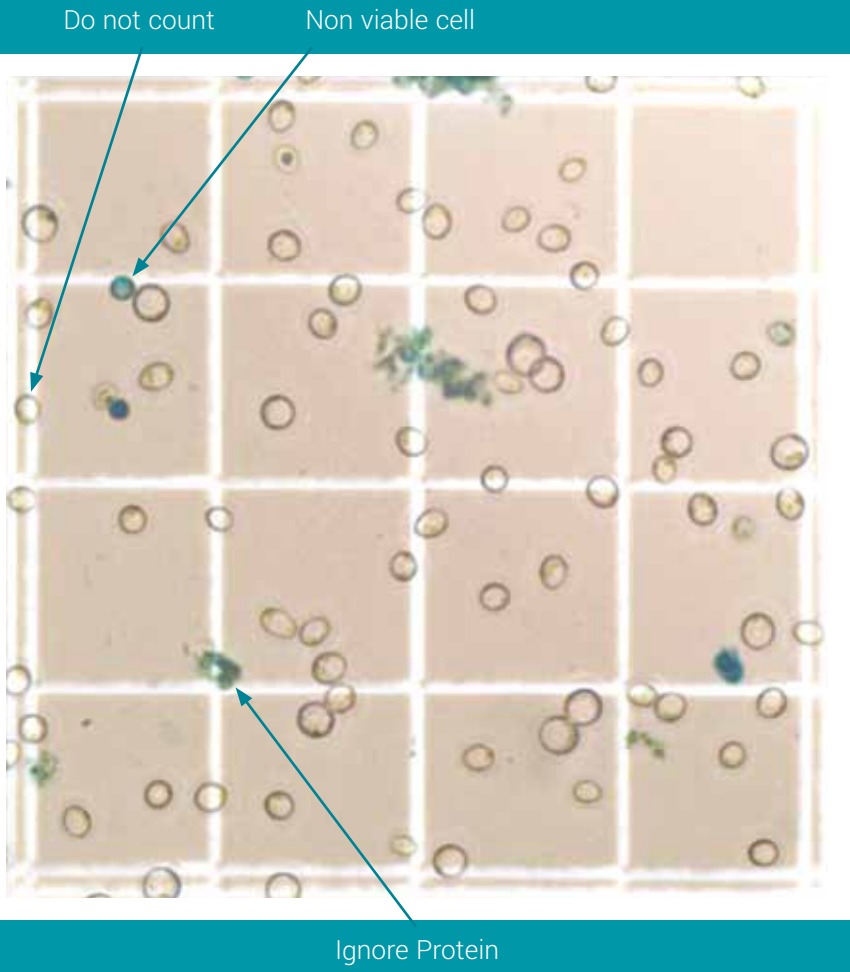


Figure 1

Get in touch, contact: **laboratory@murphyandson.co.uk**

- Now count the cells in each box labelled 1 – 5 using the following photo as a guide:

Figure 2



- This photo represents one of the smaller boxes labelled 1 – 5 (Figure 1)
- Count the entire number of cells in this 4x4 grid
- Only count cells that are completely inside the grid
- For cells that are overlapping outer grid lines only count cells that are 50% + inside the grid
- Ignore the fluffy lumps of protein
- Once all cells are counted then count the number of 'non viable' cells which are blue from soaking up the MB dye
- For total count and viability use the working out below:

Total Count	• 62	Total # of cells counted (Example)
	• * 2	Dilution factor from methylene blue
	• X 50000	Multiplication factor for Haemocytometer
		(62*2) x 50,000 = 6.2 x 10-6 per ml (6.2 million cells per ml)
Non Viable Cells	• 6	Total # of cells counted that are blue (Example)
	• * 2	Dilution factor from methylene blue
	• X 50000	Multiplication factor for Haemocytometer
		(6*2) x 50000 = 0.6 x 10-6 per ml (0.6 million cells per ml)
Viability (%)	(0.6 / 6.2) x 100	9.67 % Non Viable Cells
	100 – 9.67	90.33 % Total Viability

Ideally for a healthy yeast count the viability should be somewhere between 80% and 90%

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