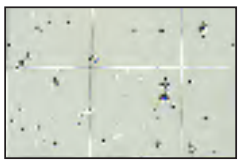
FURMAN
Sensory Dynamics
Fluid Intelligence™

Brewing yeast viability study with the use of in-line bio-generating wort structuring device.

Overview

Over a 20 week period, 15) 50 gallon batches of various styles of beer, using 3 different varieties of brewing yeast were studied for viability. Each of the 3 starter batches, **Group A** (generation 0) were sampled and tested without the use of the device, then each of the next generations, **Group B** were sampled and tested in production with the in-line device.

The samples were tested by using the standard 1% methylene blue stain for dead yeast cells and a standard hemocytometer counting chamber in a 1:10 yeast/water dilution.



Group A Omega Labs Lutra Norwegian Farmhouse Ale

The **Group B** Batch attenuation and duration were also observed and tested daily for specific gravity, and sensory evaluation.

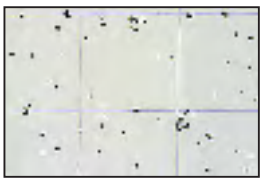
The varieties of yeast tested were Wyeast Belgian High Gravity Trappist Ale, Wyeast London III Ale, and Omega Labs Lutra Kviek Norwegian Farmhouse Ale. Each of the yeasts were harvested and re pitched 4 additional generations.

Test Results

The initial **Group A** generation 0 starter batches averaged 52,000 cells per milliliter with an average of 11% dead yeast cells.

The additional **Group B** 4 generations of the 3 varieties averaged slightly higher cells per milliliter at 56,000 with an average of 2.6% dead yeast cells.

The fermentation characteristics of **Group B** mostly showed a significant increase in yeast activity. Faster starting, more vigorous fermentation with a condensed duration of both attenuation and tank turn around time. The average time to terminal gravity decreased from 8.5 to 6.5 days, and tank turn around time decreased on an average from 12 to 10 days.



Group B Omega Labs Lutra Norwegian Farmhouse Ale

The flavor characteristics of **Group B** mostly showed significant changes in balance, intensity, mouth feel, natural carbonation and general enjoyment level.

Conclusion

The use of the in-line bio-generating wort structuring device has significantly improved viability of the yeast samples in various ways. A 7.69 % increase of cells with a 76.36% decrease of dead cells. A faster more complete fermentation decreasing tank turn time with a very noticeable sensory profile improvement.