

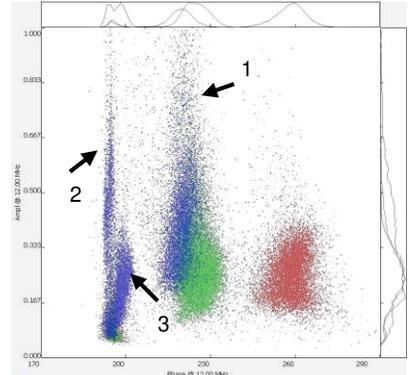


Cell Culture Development Monitoring

Proliferating cells in log phase, sampled after one day (red), are clearly distinguishable from cells in the stationary phase, sampled after two days of fermentation, which is in line with the switch from aerobic to anaerobic fermentation.

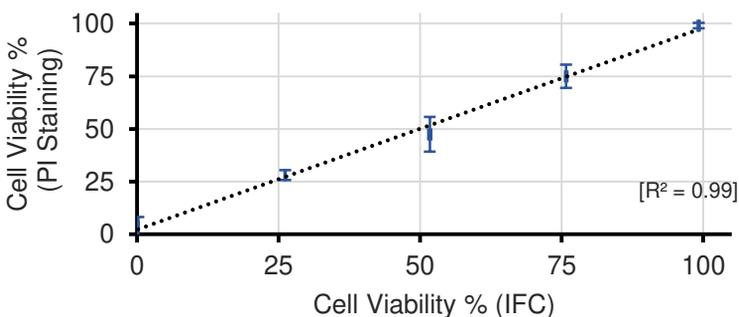
On the eighth day of the fermentation, populations appear higher up on the y-axis (1), indicating larger cell volume. At the same time an increase in dead cells (2) is observed. In addition, a new cell population is appearing (3), which is characteristic for late fermentation stages.

This data shows that high-resolution data obtained with IFC measurements offers an advantage over traditional staining methods, and provides a high level of control to guide process optimization and to make decisions during bioprocessing. This innovative technology provides immediate answers with minimal hands-on time.



An overlay of yeast cells sampled during different stages of beer fermentation shows characteristic impedance patterns. Day one (red), day two (green) and day eight (blue).

Method Comparison to Fluorescence Microscopy



A high correlation ($R^2=0.99$) between IFC and fluorescence microscopy was found, with higher precision for the IFC analysis due to a robust data analysis and significantly higher number of cells analyzed (average standard deviations of 3 independent viability determinations: IFC = 0.15 %, fluorescence microscopy = 4.4 %).

IFC Analysis offers:

Quality control through fast viability check

- Up to 1'000 cells/sec
- Viability in approx. 1 minute

A simple workflow

- No dilution needed up to 10^7 cells/ml
- No staining required

Reproducible:

- High precision due to large number of cells analyzed

Contact

Amphasys AG | Technopark Lucerne | CH-6039 Root D4 | Switzerland
 Phone: +41 41 541 91 20 | Email: info@amphasys.com | www.amphasys.com