



Customer Case Study

Fungal Fermentation

Morphology Optimization & Contaminant Detection
Raised Productivity by **19%** and Yield by **9%**

**Productivity
Increase**

**Oxygen Transfer
Optimization**

**Viscosity
Control**

**Morphology
Optimization**

The Challenge

In fungal fermentation, controlling the morphology of the culture is critical for process stability and efficiency. Highly dispersed mycelium increases viscosity and limits aeration, while larger pellets can suffer from oxygen and nutrient limitations. Optimizing morphology is essential to maximize productivity and reduce operational risks.

The Approach

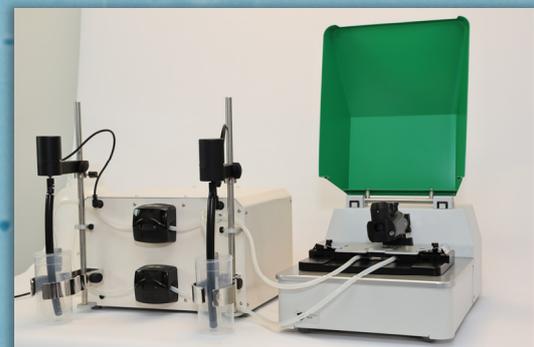
The ParticleTech Analyzer was used in pilot-scale trials to monitor pellet size and detect dispersed mycelium. By quantifying both forms, the team identified the optimal pellet size and process conditions, reducing broth viscosity, ensuring adequate aeration, and preventing nutrient gradients.

The Implementation

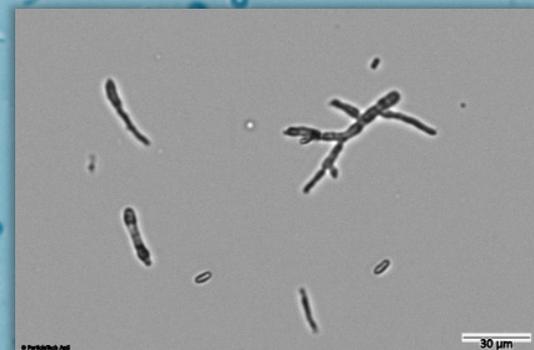
The optimized pellet size range was successfully scaled to full production. Continuous monitoring with the ParticleTech Analyzer ensures pellet size and morphology remain within target specifications and allows operators to detect potential contaminants, such as yeast, which compete for the same substrate and reduce yield.

The Result

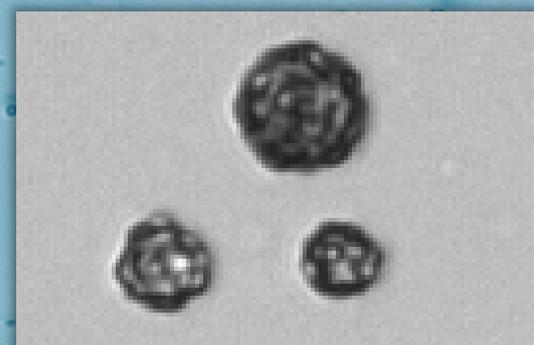
By controlling the fermentation process through real-time measurements of fungal morphology, product formation was optimized. This led to a significant increase in productivity and a more consistent, stable fermentation performance at full scale, maximizing yield & reliability.



ParticleTech Analyzer



Dispersed Mycelium Detection



Fungal Pellet Detection