

CASE STUDY

Industry:
Food &
Beverage

Enhanced Yeast Concentration System Using Polycera® Hydro Ultrafiltration Membrane

Introduction

In the production of biological products, such as yeast, concentration of fermentation broth is crucial for efficiency and product quality. This project implemented Polycera® Hydro ultrafiltration membrane for yeast concentration, aiming to improve yeast concentration and meet customer requirements.



Project Background

The project focused on concentrating fermentation broth in a biological product, specifically yeast, manufacturing line using PolyCera® Hydro ultrafiltration (UF) membrane. The system processed 5 m³/day and was implemented in 2021 to enhance production efficiency and product quality.

Process Overview

The concentration process is depicted in the process flow diagram below.

Results

The operation of the PolyCera® Hydro ultrafiltration membrane system yielded significant results:

- **Enhanced Yeast Concentration:**
The membrane effectively concentrates yeast strain, improving its concentration (2 – 5%) by more than 5 times, meeting customer requirements for product quality and efficiency.
- **Membrane Maintenance:**
Backwashing effectively reducing membrane fouling, ensuring consistent performance, while chemical cleaning restored membrane flux, prolonging membrane lifespan and reducing maintenance requirements.

Value Proposition

The utilization of PolyCera® Hydro ultrafiltration membrane offers several key advantages:

- **Improved Product Quality:**
The enhanced yeast concentration ensures higher product quality, meeting customer demands and enhancing market competitiveness.
- **Increased Production Efficiency:**
By concentrating yeast strain efficiently, the membrane system improves production efficiency, reducing processing time and costs.
- **Stable Membrane Operation:**
Effective membrane cleaning techniques, including backwashing and chemical cleaning, ensure consistent performance and prolong membrane lifespan, reducing operational downtime and costs.

POLYCERA®

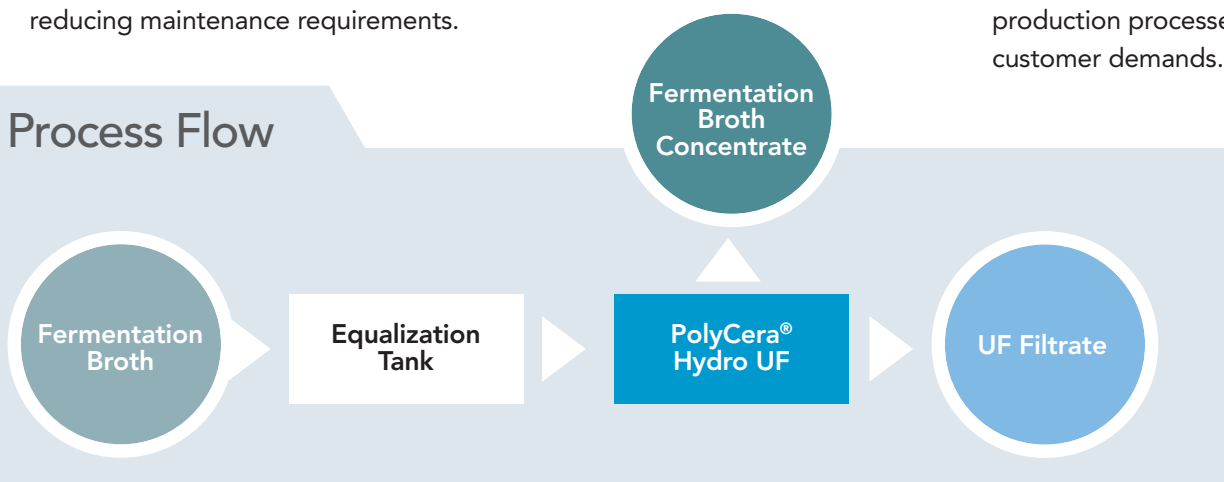


Close-up view of a PolyCera® membrane element

Conclusion

The implementation of PolyCera® Hydro ultrafiltration membrane for yeast concentration in biological product manufacturing demonstrates its effectiveness in improving product quality and production efficiency. By enhancing yeast concentration and employing effective membrane cleaning strategies, the membrane system offers a reliable solution for optimizing production processes and meeting customer demands.

Process Flow



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