

Developing a Continuous Fermentation Reactor for Beer

A Major Qualifying Project Report
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Abstract

Continuous fermentation has the potential to drastically reduce industrial brewing costs. An existing hybrid PBR-GLR for the continuous fermentation of mead was scaled down. First, mead was successfully produced; then, beer (Belgian golden ale) production was attempted. Conversion to beer required feed tank refrigeration and wort filtering to prevent pipe clogging. Ale had a much lower startup time than mead, but resulted in more biomass accumulation. In both cases, our residence time was reduced ~7-fold compared to batch production. In quality testing, our continuously-fermented mead was comparable to commercial mead; our continuously fermented beer was significantly better than our batch-fermented beer (same wort recipe) and was comparable to commercial beer.

This MQP contains information deemed confidential to the business interest of the industrial sponsor. Please contact Stephen Kmiolek at sjkmiotek@wpi.edu for additional information.