Materials Analysis and Development of a Continuous Fermentation Reactor for Mead

A Major Qualifying Project submitted to the faculty of

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Abstract

Mead is a honey-based alcohol produced using honey, water, and a yeast strain in a batch vessel. Our sponsor Maine Mead Works uses a system that combines fluidize and packed bed reactor technologies. Our research analyzed the continuous system and evaluated different fermentation media with the goal of understanding if the type of yeast and substrate affect the growth rate of yeast and alcohol content. The first step was to create a scaled down version of Maine Mead's column. Next step was to create a matrix of mini batch reactors comprised of Maine Mead ginger, store bought ginger, and silica beads and with Maine Mead yeast and Champagne yeast. After to test the mini reactors in the UV Spectrophotometer and GC-MS machine. Finally, scale the best result into the large continuous column.

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