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Subscription

Czech J. Food Sci.

Lehnert R., Novák P., Macieira F., Kuřec M.,

Teixeira J.a., Branyik T.:

Optimisation of lab-scale continuous alcohol-free beer production

Czech J. Food Sci., 27 (2009): 267-275

In order to study the formation and conversion of the most important flavour compounds, the real wort used in alcoho free beer fermentation was mimicked by complex model medium containing glucose, yeast extract, and selected aldehydes. The fermentation experiments were carried out in a continuously operating gas-lift reactor with brewing yeast immobilised on spent grains (brewing by-product). During the continuous experiment, parameters such as oxygen supply, residence time (Rt), and temperature (T) were varied to find the optimal conditions for the alcohol-free beer production. The formation of ethano higher alcohols (HA), esters (ES), as wel as the reduction of aldehydes and consumption of glucose were observed.

The results suggest that the process parameters represent a powerful tool in controlling the degree of fermentation and flavour formation brought about by immobilised biocatalyst. Subsequently, the optimised process parameters were