STUDY OF THE PROCESS OF FERMENTATION OF WORT PREPARED WITH MALT AND ADJUNCTS WITH BLACK OR WHITE RICE

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According to Brazilian law of beverages, in a beer, part of barley malt can be substituted by other cereals, called malt adjuncts. Adjuncts such as corn syrup, maltose, rice, etc have lower costs of production on malt barley and they are alternative sources of carbohydrates that contribute with fermentable sugars to the wort. The objective of this study was to evaluate the production of beers with the addition of black or white rice as non malted adjuncts, in comparison to pure malt beer. The production of beer and the analysis were assayed in the Pilot Plant of Beverages, Engineering School of Lorena, University of São Paulo. The mashing was adapted from Almeida e Silva and Dragone (2010). For the wort with rice as an adjunct, we performed a pre-heat treatment in the presence of enzymes, to provide gelatinization of the rice, to facilitate the process of starch hydrolysis of these raw materials. The fermentation was conducted at a temperature of 12°C for 160 hours, and samples were collected during the process for the analysis of Alcohol (% v/v), Real Extract (% m/m) and Apparent Extract (°P). The alcohol production ranged from 2.36 to 3.38% (v/v) and it was found that the consumption of sugars contained in black or white rice worts were markedly increased to 72 h, while the consumption in pure malt wort was regular throughout the process.